

# Toll Bridge Seismic Retrofit Program Report



## TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



**Third Quarter Report**

September 30, 2006





# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Toll Bridge Program Oversight Committee  
Department of Transportation  
Office of the Director  
1120 N Street  
P.O. Box 942873  
Sacramento, CA 94273-0001

November 14, 2006

Mr. Gregory Schmidt  
Secretary of the Senate  
State Capital, Room 3044  
Sacramento, CA 95814

Mr. E Dotson Wilson  
Chief Clerk of the Assembly  
State Capital, Room 3196  
Sacramento, CA 95814

Dear Messrs. Schmidt and Wilson:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2006 Third Quarter "Toll Bridge Seismic Retrofit Program Report," prepared pursuant to California Streets and Highways Code Section 30952.2. The Third Quarter report includes project progress and activities for the Toll Bridge Seismic Retrofit Program through September 30, 2006.

California Streets and Highways Code Section 30952.1 established the TBPOC to exercise project oversight and control over the Toll Bridge Seismic Retrofit Program. The TBPOC is comprised of the Director of the Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA), and the Executive Director of the California Transportation Commission (CTC). The TBPOC's program oversight and control activities include review and approval of contract bid documents, review and resolution of project issues, evaluation and approval of project change orders and claims, and the issuance of monthly and quarterly program progress reports.

Gregory Schmidt  
E Dotson Wilson  
November 14, 2006  
Page 2

As mentioned in the Third Quarter report, on September 19, 2006, Caltrans received a single bid for the San Francisco Bay Bridge East Span Replacement Project Submarine Cable Contract. The single bid exceeded the engineer's estimate and the funding authorization for the project. After the close of the quarter, in October 2006, Caltrans was required to reject the single bid due to technical specification conflicts that limited competitive bidding. The TBPOC has reviewed options for proceeding with the project and has directed Caltrans to re-advertise the contract as quickly as possible with revised specifications to allow more cable fabricators and cable installers to bid on the project and to incorporate work-around language within the Oakland Touchdown 1 contract specifications to minimize any potential delays to the bridge project. To ensure that the re-advertisement of the submarine cable could proceed expeditiously, on October 25, 2006, BATA delegated authority to the BATA Executive Director to approve the release of the revised bid documents and specifications for the cable relocation project. The Fourth Quarter report will include an update on the re-advertisement of the submarine cable project.

The TBPOC is committed to providing the Legislature with comprehensive and timely reporting on the Toll Bridge Seismic Retrofit Program. If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,



WILL KEMPTON  
Director  
California Department of  
Transportation  
Chair, TBPOC



JOHN F. BARNA, JR.  
Executive Director  
California Transportation Commission



STEVE HEMINGER  
Executive Director  
Bay Area Toll Authority



# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS

BAY AREA TOLL AUTHORITY

CALIFORNIA TRANSPORTATION COMMISSION

Toll Bridge Program Oversight Committee  
Department of Transportation  
Office of the Director  
1120 N Street  
P.O. Box 942873  
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November 14, 2006

Ms. Marian Bergeson, Chair  
California Transportation Commission  
1120 N Street, Room 2221  
Sacramento, CA 95814

Mr. James C. Ghilmetti, Vice Chair  
California Transportation Commission  
1120 N Street, Room 2221  
Sacramento, CA 95814

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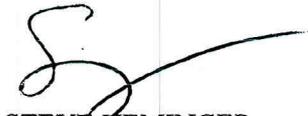
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WILL KEMPTON  
Director  
California Department of  
Transportation  
Chair, TBPOC



JOHN F. BARNA, JR.  
Executive Director  
California Transportation Commission



STEVE HEMINGER  
Executive Director  
Bay Area Toll Authority

## Table of Contents

Executive Summary.....	2
Program Overview.....	5
Risk Management.....	6
Table 2-Toll Bridge Seismic Retrofit Program—Cost Summary .....	8
Table 3-Toll Bridge Seismic Retrofit Program—Schedule Summary .....	9
Program Costs.....	10
Baseline and Projected Budget.....	10
Summary of TBPOC Expenses .....	10
Program Schedule.....	12
Baseline and Projected Schedule.....	12
Program Funding and Financing .....	14
Funding Status .....	15
Program Financing .....	16
Project Status .....	17
Completed Projects.....	17
Ongoing Construction Projects.....	19
SFOBB West Approach .....	19
Milestones Achieved .....	19
Project Funding.....	19
Major Risk Issues .....	20
SFOBB East Span Seismic Replacement.....	21
Milestones Achieved – East Span Contracts .....	24
Project Funding.....	27
Baseline and Projected Budget and Schedule .....	27
Major Risk Issues .....	29
SFOBB East Span Risk Management Plan.....	29
Quarterly Environmental Compliance Highlights .....	29
Other Toll Bridges.....	30
Dumbarton and Antioch Bridges .....	30
Previous Reports .....	30
Vulnerability Studies.....	30
Sensitivity Analysis.....	30
Cost and Schedule .....	31
Appendices .....	32
Appendix A-1 .....	33
Appendix A-2 .....	34
Appendix B.....	35
Appendix C.....	37
Appendix D .....	38

## Executive Summary

The Toll Bridge Program Oversight Committee (TBPOC) submits the 2006 Third Quarter Report ending September 30, 2006, for the Toll Bridge Seismic Retrofit Program (TBSRP) in accordance with Assembly Bill (AB) 144 and Senate Bill (SB) 66. This report provides the following:

1. Information on the progress of each project in the program.
2. Baseline budget for Capital Outlay (CO) and Capital Outlay Support (COS).
3. Current projected costs for CO and COS.
4. Expenditures to date.
5. Comparison of the baseline schedule to the September 2006 projected schedule.
6. Summary of the milestones achieved during the quarter.
7. Major risk assessment for the remaining projects.
8. Summary of expenses incurred by the TBPOC in performing its duties.

### Major Milestones During the Third Quarter 2006

Significant progress on the completion of the seismic retrofit projects continued during this past quarter. Appendix D includes a gallery of photos of construction activities on the bridge projects. Only one of the seven toll bridges in the TBSRP remains to be retrofitted. The major milestones achieved during the quarter include:

- The San Francisco-Oakland Bay Bridge (SFOBB) West Approach Project is 72 percent complete and is on schedule to finish on or before August 2009. The highlight of work during the Third Quarter was the demolition of various structural frames from just prior to midnight on Friday, September 1, 2006, to just prior to 5:00 a.m. on Tuesday, September 5, 2006. This involved the closure of the lower deck of the SFOBB to accommodate the demolition of the upper deck. Demolition operations commenced without incident and

were completed about 35 minutes ahead of schedule. Besides reducing travel impacts to the public, and compressing the demolition time from nine weekends to a single long weekend, this bridge closure also allowed for various other construction operations along five miles of the bridge, from 7th street in San Francisco, to the Oakland Toll Plaza.

- The SFOBB East Span Seismic Replacement Project Skyway contract is 93 percent complete as of September 2006. The Stockton pre-cast yard has cast 100 percent of the Skyway segments. On August 29, 2006, the westbound steel transition tub from the skyway to the SAS span was lifted successfully into place; this was one of the heaviest lifts ever completed by Caltrans. The westbound structure is 96 percent complete with ten segments remaining to be erected. Bike path cantilever beam installation is complete and the installation of the panel segments is currently 60 percent complete. An overall settlement has been reached with the Contractor, which resulted in an extension of the contract completion date to December 2007. This change will not delay the open-to-traffic date for the new East Span Replacement project, nor will the settlement exceed the budget for the Skyway contract.



SFOBB Skyway – West End

- The SFOBB East Span Seismic Replacement Project Self-Anchored Suspension (SAS) Marine Foundation East Pier and Tower Pier (E2/T1) contract is 54 percent complete as of September 2006. Pile driving for the East Pier has been completed. Work is on-going on the installation of the footing for the East Pier and the pile driving for the Tower Pier near Yerba Buena Island.
- For the SFOBB East Span Seismic Replacement Project SAS Superstructure contract, the Contractor is mobilizing staff to the field office at Pier 7 in Oakland. Development of various administrative submittals, including the baseline schedule, is continuing. The Contractor is finalizing agreements with manufacturers, fabricators, suppliers and subcontractors. A contract with Zhenhua Port Machinery Company (ZPMC), of Shanghai, China, to supply and fabricate all the major steel structures in SAS including the tower, orthotropic box girders, and bike paths, was executed on July 18, 2006.
- The SFOBB East Span Seismic Replacement Project Yerba Buena Island South-South Detour (SSD) contract is 39 percent complete as of September 2006. Caltrans and its consultants are designing the East and West tie-ins. The construction of the tie-ins has been temporarily suspended and is being managed in conjunction with the SAS schedule to minimize impacts to the traveling public. The suspension of the tie-in work has necessitated additional design enhancements to the viaduct segment to allow it to stand in place alone for a longer duration to allow it to be connected to the East tie-in. The transfer of steel from the fabricator, Shanghai Grand Towers, Ltd. to Dongkuk S&C of South Korea has been completed. Shop drawings for the viaduct structure are progressing and the new steel fabricator is preparing the Welding Quality Control Plan for approval.

- The SFOBB Seismic Replacement Project Stormwater Treatment Measures contract is 24 percent complete as of September 2006. The current schedule forecast reflecting an earlier completion date than the approved schedule is due to the combination of an early contract award date and the shorter construction duration bid by the Contractor. Work continues on installation of drainage structures, installation of ductile iron pipe, and installation of pump stations.



*Pile Driving at East Pier*



*Pump Station 1B Valve Vault: Stormwater Treatment Measure Contract*

- The SFOBB East Span Seismic Replacement Project Oakland Touchdown (OTD) Submarine Cable contract will replace the existing submarine electrical cable from Oakland to Treasure Island. This contract was advertised for bids on July 31, 2006. Bids were opened on September 19, 2006; only one bid was received that was substantially over the Engineer’s Estimate.
- The SFOBB East Span Seismic Replacement Project OTD #1 contract includes construction of all the marine foundations, and the westbound bridge section and roadway approach for the section that connects the new Skyway portion to the roadway west of the Oakland Toll Plaza. Design work is complete. Plans, Specifications, and Engineer’s Estimate (PS&E) were submitted to the Caltrans Office Engineer on September 1, 2006. The advertisement for bidders for this contract is scheduled for early 2007 and contract completion is scheduled for October 2009.
- In June 2006, BATA approved \$17.8 million to proceed with a comprehensive seismic analysis

of the Dumbarton and Antioch Bridges. In September 2006, the BATA Oversight Committee selected Earth Mechanics as the Consultant for the Phase 1 Geotechnical Investigation. BATA entered into a contract with the Consultant on September 26, 2006. It is expected that field work will commence in November 2006.

- In October 2006, the TBPOC approved a budget change for the Richmond-San Rafael Bridge Seismic Retrofit project, with a transfer of \$89 million in project cost savings to the Toll Bridge Seismic Retrofit Program Contingency.

As shown on *Table 2-Toll Bridge Seismic Retrofit Program—Cost Summary* (see page 8), the program contingency for the total seismic retrofit program is \$940.7 million, which is \$48.3 million less than the program contingency shown in the 2<sup>nd</sup> Quarter Report. The reduced contingency is due to revised forecasts for some of the SFOBB East Span contracts. As shown in the table, the revised program contingency continues to exceed the original contingency budgeted in the AB 144/SB 66 program.



Submarine Cable Relocation

## Program Overview

Seven of the nine state-owned toll bridges were identified for seismic retrofit in the TBSRP:

1. Benicia-Martinez Bridge
2. Carquinez Bridge
3. San Mateo-Hayward Bridge
4. Vincent Thomas Bridge
5. San Diego-Coronado Bridge
6. Richmond-San Rafael Bridge
7. SFOBB (west span, west approach replacement, and east span replacement).

Seismic retrofit of these complex structures presents an extremely difficult engineering challenge and nowhere in the world has a bridge seismic safety program of this size been undertaken. Although the Dumbarton and the Antioch bridges were not included in the program, Caltrans is continuing to work on seismic vulnerability studies to assess the

potential for necessary retrofit work on these structures. See discussion on page 30.

As shown in *Table 1-TBSRP Project Status*, a significant portion of the TBSRP is complete. Cost savings of \$89 million from the project cost included in the AB 144/SB 66 baseline budget on the completed Richmond-San Rafael Bridge has been transferred to the Toll Bridge Seismic Retrofit Program Contingency, as directed by the TBPOC.

The SFOBB west approach and new east span seismic replacement projects are currently under construction. The Third Quarter 2006 forecast for those projects indicates that they will be completed within the current TBPOC approved cost and schedule estimates.

*Tables 2 and 3* provide a summary of the cost, schedule, and status of all the TBSRP projects.

**Table 1-TBSRP Project Status**

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Construction
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
Carquinez Bridge Eastbound Seismic Retrofit	Complete
Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

## Risk Management

The following is a summary of risk management activities during the Third Quarter of 2006.

### Developments this Quarter

- **East Span Schedule Risk Team:** Caltrans has formed a team to review and assess schedule risks for the East Span. The team also reviews risks in schedule options that may be developed by various focus groups.
- **COS Risks:** A risk register has been developed for COS costs. The COS risk register contains risks that affect all projects and incorporates risks that have a COS impact from the project risk registers. A quantitative risk analysis from the register is currently underway.
- **Program-level Risks:** A program-level risk register was developed this quarter. It captures risks that are common to all projects, and the cost of potential delays arising from one project delaying another. The cross-delay risk is currently being analyzed using the integrated East Span corridor schedule and the potential for delay within each project.
- **Adequacy of Reserves:** AB144 requires Caltrans to regularly assess its reserves for risks and potential claims. Currently, there is a forecasted \$940.7 million Program Contingency. COS cost projections, driven primarily by additional costs for SAS staff and expenses in China, may exert pressure on the contingency.

### Risk Management Achievements on Contracts

- **Skyway contract:** A global Claim Settlement Report was approved with the Skyway Contractor, which has significantly eliminated

risks and has closed out over forty Contract Change Orders (CCOs).

- **West Approach:** Five risks were retired because of the successful completion of the demolition work over the Labor Day weekend. A very effective public information campaign and timely execution of the work by the project team are credited with avoiding the risks.
- **E2-T1 Foundations contract:** Caltrans is investigating opportunities to further mitigate risks with the pile casing fabrication. While this operation is not yet on the critical path, it is reducing the likelihood of early contract completion.
- **SSD contract:** The risks associated with the Contractor designing the East and West tie-in structures have been mitigated because Caltrans has assumed management of the design, with input from the Contractor regarding constructability issues. Caltrans is studying options to accelerate portions of the YBITS substructure and foundation work into the SSD contract to mitigate risk to the East Span schedule associated with minimizing time traffic is on the detour.
- **SAS contract:** The Contractor is continuing to ramp up operations. Caltrans is responding rapidly to requests for information. The roles and responsibilities among Materials Engineering and Testing Services, Construction and Design teams are being clarified to ensure timely resolution of issues arising in the fabrication shops. This is an important risk mitigation response because fabrication is critical to the schedule and timely decisions will minimize the potential for extra costs and delays.
- **Stormwater Treatment Measures contract:** Eight risks were mitigated this quarter and are retired. Three were at no additional project cost, and the other five will be resolved through CCOs.

### Near-Term Risk Management Actions

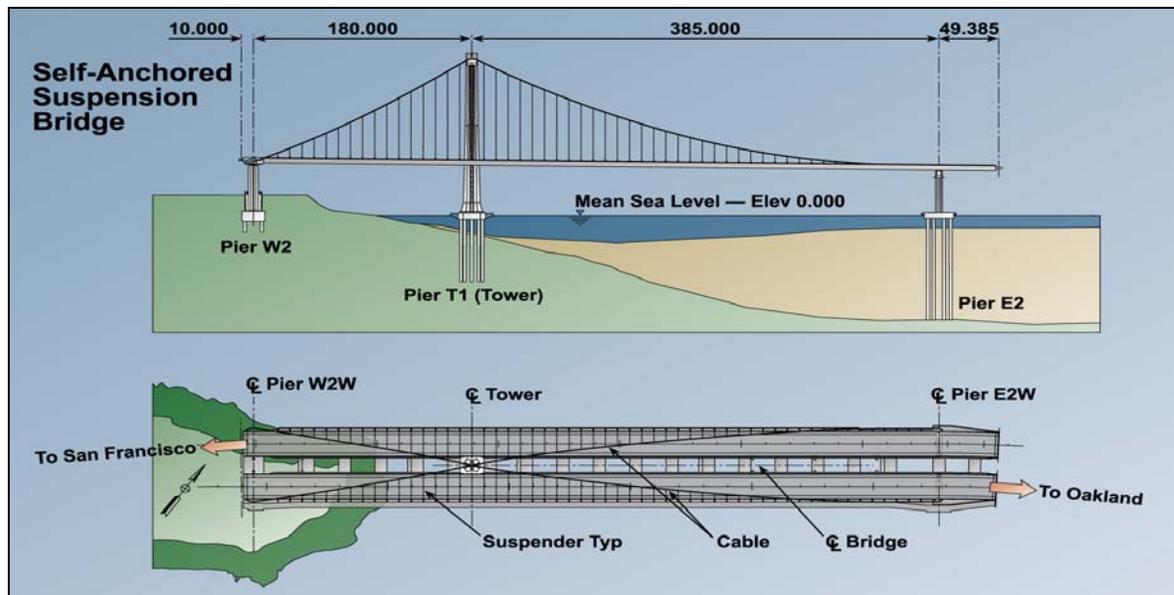
The anticipated risk management activities over the next two quarters will focus on:

- Continuing the development and execution of appropriate and effective risk responses.
- Completing the program-level and COS risk registers, including quantitative risk analysis.
- Evaluating any pressures on the Program Reserve.
- Further refining risk management procedures and processes.



*Lifting of Westbound Orthotropic Box Girder*

Forecast near-term risk management activities are based on what is known and anticipated at this time. They remain subject to change as conditions, events, and priorities dictate.



**Table 2-Toll Bridge Seismic Retrofit Program—Cost Summary (\$Millions)**

Project	Work Status	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (09/2006)	Actual Cost To Date (09/2006)	3rd Quarter 2006 Forecast	At-Completion Variance	Cost Status
a	b	c	d	e = c + d	f	g	h = g - e	i
<b>SFOBB East Span Replacement Project</b>								
Capital Outlay Support		959.4	-	959.4	450.3	977.1	17.7	●
Capital Outlay Construction								
Skyway	Construction	1,293.0	-	1,293.0	1,092.4	1,293.0	-	●
SAS E2/T1 Foundations	Construction	313.5	-	313.5	169.2	313.5	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	141.2	1,767.4	13.7	●
YBI Transition Structures	Design	299.3	-	299.3	-	318.5	19.2	●
Oakland Touchdown		283.8	-	283.8	-	302.5	18.7	
* OTD Submarine Cable	Advertise				-	9.6	-	●
* OTD No. 1 (Westbound)	Design				-	226.5	-	●
* OTD No. 2 (Eastbound)	Design				-	62.0	-	●
* OTD Electrical Systems	Design				-	4.4	-	●
South/South Detour	Design/ Const	131.9	-	131.9	35.3	152.2	20.3	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	222.0	(17.2)	●
Stormwater Treatment Measures	Construction	15.0	-	15.0	3.4	15.0	-	●
East Span Completed Projects		90.3	-	90.3	89.2	90.3	-	
Right-of-Way and Environmental Mitigation		72.4	-	72.4	38.8	72.4	-	●
Other Budgeted Capital		35.1	-	35.1	1.5	11.0	(24.1)	
<b>Total SFOBB East Span Replacement Project</b>		<b>5,486.6</b>	<b>-</b>	<b>5,486.6</b>	<b>2,021.3</b>	<b>5,534.9</b>	<b>48.3</b>	
<b>SFOBB West Approach Replacement</b>								
Capital Outlay Support	Construction	120.0	-	120.0	83.6	120.0	-	●
Capital Outlay Construction		309.0	-	309.0	212.5	309.0	-	
<b>Total SFOBB West Approach Replacement</b>		<b>429.0</b>	<b>-</b>	<b>429.0</b>	<b>296.1</b>	<b>429.0</b>	<b>-</b>	
<b>Richmond-San Rafael Bridge Retrofit</b>								
Capital Outlay Support	Construction	134.0	(7.0)	127.0	125.5	127.0	-	●
Capital Outlay Construction		780.0	(82.0)	698.0	663.8	698.0	-	
<b>Total Richmond-San Rafael Bridge Retrofit</b>		<b>914.0</b>	<b>(89.0)</b>	<b>825.0</b>	<b>789.3</b>	<b>825.0</b>	<b>-</b>	
<b>Program Completed Projects</b>								
Capital Outlay Support	Complete	219.8	-	219.8	219.4	19.8	-	
Capital Outlay Construction		705.6	-	705.6	698.0	705.6	-	
<b>Total Program Completed Projects</b>		<b>925.4</b>	<b>-</b>	<b>925.4</b>	<b>917.4</b>	<b>925.4</b>	<b>-</b>	
<b>Miscellaneous Program Costs</b>								
Program Contingency		900.0	89.0	989.0	-	940.7	(48.3)	
<b>Total Toll Bridge Seismic Retrofit Program</b>		<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>4,048.8</b>	<b>8,685.0</b>	<b>-</b>	

- Within Approved Schedule and Budget
  - Potential Cost and Schedule Impacts: Likely future need for Program Contingency Allocation
  - Known Cost and Schedule Impacts: Request for Program Contingency Allocation forthcoming
- Note: Details may not sum to totals due to rounding effects.

**Table 3-Toll Bridge Seismic Retrofit Program—Schedule Summary**

Project	AB 144 / SB 66 Project Complete Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (09/2006)	Project Complete Schedule Forecast (09/2006)	Schedule Variance (Months)	Schedule Status	Remarks
a	b	c	d= b + c	e	f = e - d	g	h
SFOBB East Span Replacement Project Skyway	Apr 07	8	Dec 07	Dec 07	-	●	A schedule extension due to hinge pipe beam fabrication, service platforms electrical appurtenances, polyester concrete, etc., has been approved by the TBPOC.
SAS E2/T1 Foundations	Jun 08	(3)	Mar 08	Mar 08	-	●	Contract executed on May 3, 2006. See Note.
SAS Superstructure	Mar 12	12	Mar 13	Mar 13	-	●	
YBI Transition Structures	Nov 13	12	Nov 14	Nov 14	-	●	
Oakland Touchdown (OTD)	Nov 13	12	Nov 14	Nov 14	-	●	A sole bid was opened on September 19, 2006. The sole bid cost exceeded the project estimate.
• OTD Submarine Cable	n/a		Jul 07	Oct 07	3	●	
• OTD Westbound	n/a		Jul 09	Oct 09	3	●	
• OTD Eastbound	n/a		Nov 14	Nov 14	-	●	
YBI South/South Detour	Jul 07	-	Jul 07	TBD	TBD	●	Schedule is being assessed. Forecast completion date is TBD.
Existing Bridge Demolition	Sep 14	12	Sep 15	Sep 15	-	●	See Note.
Stormwater Treatment Measures	Mar 08	-	Mar 08	Jun 07	(9)	●	Forecast based on actual award date and duration in Contractor's A+B bid.
Open to Traffic Date: Westbound	Sep 11	12	Sep 12	Sep 12	-	●	See Note.
Open to Traffic Date: Eastbound	Sep 12	12	Sep 13	Sep 13	-	●	See Note.
SFOBB West Approach Replacement	Aug 09	-	Aug 09	Aug 09	-	●	
Richmond-San Rafael Bridge							
• Seismic Retrofit	Aug 05	-	Aug 05	Oct 05	2	●	Seismic retrofit completed July 29, 2005. Formal acceptance of this contract on October 28, 2005. \$89 million has been transferred to Program Contingency.
• Public Access Project	n/a	-	May 07	May 07	-	●	Bids to be opened November 1, 2006.

Note: Schedules for selected projects and the Open to Traffic dates were extended by 12 months from the AB 144/SB 66 baseline schedule due to Addenda #5 and #7 on the SAS Superstructure contract in response to bidder inquiries and to reduce costs.

## Program Costs

### Baseline and Projected Budget

The 2005 AB 144/SB 66 baseline budget is \$7.785 billion for CO and COS plus \$900 million in program contingency, for a total baseline budget of \$8.685 billion. The Third Quarter 2006 forecast for the program remains within the \$8.685 billion budget. As highlighted above, \$89 million cost savings on the Richmond-San Rafael Bridge project has been transferred to the Toll Bridge Seismic Retrofit Program Contingency, as directed by the TBPOC. The Third Quarter forecast for the SFOBB East Span Project has increased to \$5.535 billion due to a revised construction cost estimate on the OTD #1 and YBI SSD contracts.

Additional cost estimate and expenditure detail for the TBSRP are included in Appendices A-1 and A-2. The details of the cost estimates and expenditures for the SFOBB east span are shown in Appendix B.

### Summary of TBPOC Expenses

Pursuant to Streets and Highways Code Section 30952.1 (d), expenses incurred by Caltrans, BATA, and the California Transportation Commission (CTC) for costs directly related to the duties associated with the TBPOC are to be reimbursed by toll revenues. *Table 5-Toll Bridge Program Oversight Committee Actual Expenses: July 1, 2005 through September 30, 2006* shows actual expenses through September 30, 2006, for TBPOC functioning, support, and monthly and quarterly reporting.

**Table 4-Toll Bridge Seismic Retrofit Program Baseline (AB 144/SB 66) And Forecasts (\$ million)**

Contracts	AB 144 / SB 66 Baseline Budget	Approved Changes	Current Approved Budget	3rd Quarter 2006 Forecast	Difference from Current Approved Budget
<b>Completed Projects</b>					
Benicia-Martinez	177.8	-	177.8	177.8	-
Carquinez	114.2	-	114.2	114.2	-
San Mateo-Hayward	163.5	-	163.5	163.5	-
Vincent Thomas	58.5	-	58.5	58.5	-
San Diego-Coronado	103.5	-	103.5	103.5	-
SFOBB West Span	307.9	-	307.9	307.9	-
<b>Ongoing Projects</b>					
Richmond-San Rafael	914.0	(89.0)	825.0	825.0	-
SFOBB West Approach	429.0	-	429.0	429.0	-
SFOBB East Span	5,486.6	-	5,486.6	5,534.9	48.3
Miscellaneous Program Costs	30.0	-	30.0	30.0	-
<b>Subtotal</b>	<b>7,785.0</b>	<b>(89.0)</b>	<b>7,696.0</b>	<b>7,744.3</b>	<b>48.3</b>
Program Contingency	900.0	89.0	989.0	940.7	(48.3)
<b>Total Program</b>	<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>8,685.0</b>	<b>-</b>

**Table 5-Toll Bridge Program Oversight Committee  
Actual Expenses: July 1, 2005 through September 30, 2006  
(\$ Millions)**

Agency/Program Activity	FY 2005 - 2006 Actual Costs
BATA	0.2
Caltrans	0.3
CTC	0.1
Reporting	0.9
<b>Total Program</b>	<b>1.5</b>



*Aerial view of Skyway construction*



*Aerial view of Bay Bridge East Span and new Skyway*

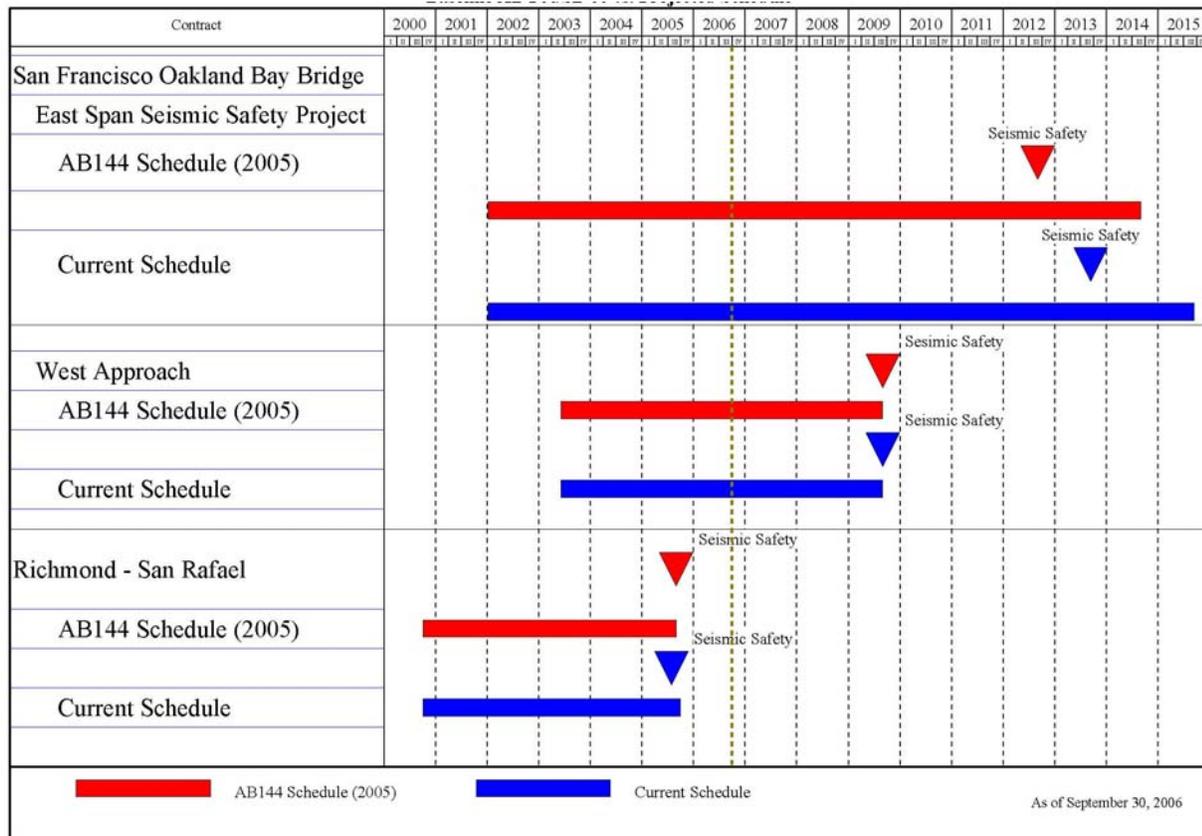
# Program Schedule

## Baseline and Projected Schedule

Seismic retrofit on six of the seven toll bridges in the TBSRP is complete. These structures include the Benicia-Martinez, Carquinez, Richmond-San Rafael, San Mateo-Hayward, Vincent Thomas, and San Diego-Coronado bridges. Seismic retrofiting of the SFOBB west span was completed in June 2004. The SFOBB West Approach and East Span Seismic Replacement projects are currently under construction. The September 2006 schedule calls for achieving seismic safety and opening to traffic the SFOBB new east span in 2013. Since the adoption of the AB 144/SB 66 baseline schedule, the opening

date for the project has been extended by 12 months due to the approval of Addendum #5 and Addendum #7 to the SFOBB East Span Seismic Replacement Project SAS contract. Although the current schedule forecast does not reflect achievement of the six-month early completion incentive provided for by SAS contract Addendum #7, schedule planning for the OTD and YBITS contracts is being done as to respond to this possibility. It is estimated that all of the construction activities for the SFOBB East Span Seismic Replacement project will be completed by 2015, marked by the planned demolition of the existing SFOBB east span. The completion of the Skyway contract has been revised from April 2007 to December 2007 as approved by the TBPOC due to a

**Chart 1-Toll Bridge Seismic Retrofit Program Schedule  
Baseline AB 144/SB 66 vs. Projected Schedule**



Contract Change Order (CCO) executed with the Contractor that resolves a variety of construction issues. This change in the contract's completion date will not delay the open-to-traffic date for the new east span. The schedule for the SSD contract has been affected by the 12-month change to the SAS contract schedule and the extensive study to find a best solution. The amount of delay to this contract is yet to be determined and is subject to analysis by Caltrans and negotiation with the Contractor. This delay is not expected to impact the open-to-traffic for the new east span. *Chart 1-Toll Bridge Seismic Retrofit Program Schedule*, shows the baseline, AB 144/ SB 66 project schedule versus the projected completion schedules for the TBSRP projects under construction.



*Westbound Orthotropic Box Girder: Skyway Contract*



*SSD Construction*



*Cofferdam Frame for East Pier*

## Program Funding and Financing

AB 144 established a funding level of \$8.685 billion for the TBSRP. The bill specifies funding sources for the program, as shown in *Table 6-Program Budget*.

**Table 6-Program Budget as of September 30, 2006 (\$ Millions)**

	Budgeted	Funding Available & Contributions
<b>Financing</b>		
Seismic Surcharge Revenue AB 1171	\$2,282	\$2,282.0
Seismic Surcharge Revenue AB 144	\$2,150	\$2,150.0
BATA Consolidation	\$820	\$820.0
<b>Subtotal - Financing</b>	<b>\$5,252</b>	<b>\$5,252.0</b>
<b>Contributions</b>		
Proposition 192	\$790	\$789.0
San Diego Coronado Toll Bridge Revenue Fund	\$33	\$33.0
Vincent Thomas Bridge	\$15	\$6.9
State Highway Account <sup>(1)(2)</sup>	\$745	\$745.0
Public Transportation Account <sup>(1)(3)</sup>	\$130	\$90.0
ITIP/SHOPP/Federal Contingency	\$448	\$0.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR)	\$642	\$500.0
SHA - East Span Demolition	\$300	
SHA - "Efficiency Savings" <sup>(4)</sup>	\$130	\$2.0
Redirect Spillover	\$125	
Motor Vehicle Account	\$75	\$75.0
<b>Subtotal - Contributions</b>	<b>\$3,433</b>	<b>\$2,240.9</b>
<b>Total Funding</b>	<b>\$8,685</b>	<b>\$7,492.9</b>
<b>Allocated to date</b>		<b>\$5,994.7</b>
<b>Remaining Unallocated</b>		<b>\$1,498.2</b>
<p><sup>(1)</sup> The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.</p> <p><sup>(2)</sup> To date, \$645 million has been transferred from the SHA to the TBSRP, including the full \$290 million transfer scheduled by the CTC to occur in 2005-06. An additional \$100 million has been expended directly from the account.</p> <p><sup>(3)</sup> To date, \$90 million has been transferred from the PTA to the TBSRP, including the full \$80 million transfer scheduled by the CTC to occur in 2005-06. Approximately \$40 million remains to be transferred. The Department anticipates transfer of such balance in Fiscal Year 2006-07 as directed by the California Transportation Commission.</p> <p><sup>(4)</sup> To date, \$2 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" for 2005-06 identified under AB 144. Approximately \$128 million remains to be distributed as scheduled by the CTC.</p> <p><b>Notes:</b> Program budget includes \$900 million program contingency.</p>		

## Funding Status

The program's financial status of revenues and expenditures is summarized in the table below, *Table 7-Toll Bridge Seismic Retrofit Program Financial Status*. The figures include the surcharge revenues collected, transfers from the SHA and the

PTA, and expenditures from the Toll Bridge Seismic Retrofit Account (TBSRA) and the Seismic Retrofit Bond Act of 1996 (Proposition 192). Through September 2005, \$789 million provided by Proposition 192 has been allocated by the CTC.

**Table 7-Toll Bridge Seismic Retrofit Program Financial Status  
as of September 30, 2006 (\$ Millions)**

<b>Revenues:</b>		
Toll Surcharge <sup>(1)</sup>		687.9
Surplus Money Investment Fund (SMIF) Interest		97.9
Bond Revenue (Seismic Bond of 1996)		789.0
Bond Revenue (Toll Revenue Bonds)		1,062.0
Commercial Paper <sup>(2)</sup>		80.0
San Diego Association of Governments (SANDAG)		33.0
Vincent Thomas <sup>(3)</sup>		6.9
Federal Highway Bridge Replacement and Rehabilitation		500.0
<b>Transfers to TBSRA:</b>		
Motor Vehicle Account		75.0
SHA <sup>(4)</sup>		745.0
PTA <sup>(5)</sup>		90.0
SHA "Efficiency Savings" <sup>(6)</sup>		2.0
	Total Revenues and Transfers	<b>4,168.7</b>
<b>Expenditures:</b>		
Capital Outlay		3,145.4
State Operations		903.4
	Total Expenditures	<b>4,048.8</b>
<b>Encumbrances:</b>		
Capital Outlay		1,934.4
State Operations		11.5
	Total Encumbrances	<b>1,945.9</b>
<b>Total Expenditures and Encumbrances</b>		<b>5,994.7</b>
<p>(1) The Toll Surcharge is dedicated to repayment of bonds beginning September 1, 2003. Toll Surcharge shown here is only toll revenue collected prior to that date.</p>		
<p>(2) \$80 Million in Commercial Paper issued on or about April 5, 2005.</p>		
<p>(3) No additional funding is expected from the Vincent Thomas Toll Revenue Account.</p>		
<p>(4) To date, \$645 million has been transferred from the SHA to the TBSRP, including the full \$290 million transfer scheduled by the CTC to occur in 2005-06. An additional \$100 million has been expended directly from the account.</p>		
<p>(5) To date, \$90 million has been transferred from the PTA to the TBSRP, including the full \$80 million transfer scheduled by the CTC to occur in 2005-06. Approximately \$40 million remains to be transferred. Caltrans anticipates transfer of such balance in 2006-07 as directed by the CTC.</p>		
<p>(6) To date, \$2 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" for 2005-06 identified under AB 144. Approximately \$128 million remains to be distributed as scheduled by the CTC.</p>		

## Program Financing

As discussed above, AB 144 consolidated the administration of all toll revenues collected on the state-owned Bay Area toll bridges and financing of the TBSRP under the jurisdiction of BATA. BATA has direct programmatic responsibilities for the administration of all toll revenues collected on the state-owned bridges in the Bay Area and responsibilities for financial management of the TBSRP program, including:

- Administrative responsibility for collection and accounting of all toll revenues
- Authorization to increase tolls on the state-owned bridges by \$1.00, effective no sooner than January 1, 2007
- Project level toll setting authority as necessary to cover additional cost increases beyond the funded program contingency in order to complete the TBSRP
- Assumption of funding all of the roadway and bridge structure maintenance from Caltrans once bridge seismic retrofit projects are completed

In accordance with its responsibilities provided under the law, in September 2005, BATA adopted a finance plan for the TBSRP. The major components of the finance plan include:

- Issuing \$6.2 billion in debt, including defeasance of \$1.5 billion in outstanding State Infrastructure Bank bonds and commercial paper
- Increasing tolls on the state-owned bridges by \$1.00, (from \$3.00 to \$4.00 for two-axle vehicles), effective January 1, 2007
- Securing the maximum amount of state funding early in the construction schedule to most efficiently use toll funds (see discussion below concerning the CTC funding schedule)

- Locking in current interest rates to the extent possible in order to improve the chances that the entire toll program construction and the operations and maintenance can be delivered within the \$4.00 auto toll level

In September 2005, BATA approved a Finance Plan for the TBSRP and other toll bridge improvement programs dependent on toll revenues from the state-owned bridges. The finance plan called for \$6.2 billion in new debt issuances, including defeasance of the existing outstanding I-Bank bonds. Consistent with the finance plan, in December 2005, BATA approved the issuance of up to \$1.0 billion of 2006 toll bridge revenue bonds in February 2006. The bond issuance will provide adequate cashflow to fund the SAS contract for the East Span Replacement project, which was awarded on May 3, 2006.

Furthermore, in March 2006, BATA approved the issuance of \$1.2 billion in bonds to defease the I-Bank bonds approved in October 2005. Additionally, pursuant to the law, BATA held two public hearings, one in October and one in November 2005, to receive public testimony regarding the proposed \$1.00 seismic surcharge toll increase beginning on January 1, 2007 on the state-owned toll bridges in the Bay Area. BATA approved the toll increase on January 25, 2006.

Pursuant to AB 144, on September 29, 2005, the CTC adopted a schedule - revised in December 2005 - for the transfer of state funds to BATA to fund the TBSRP. The schedule contains the timing and sources of the state contributions, which begin in Fiscal Year (FY) 2005-06 and distributes the contributions over the years of project construction to ensure a timely balance between state sources and the contributions from toll funds. In December 2005, the CTC re-adopted the schedule to reflect opportunities to maximize the use of available PTA funds and correct prior transfer transactions. The CTC's December 2005 revised schedule for the transfer of funds allows BATA to pledge the state fund contribution to the financing of the TBSRP per

BATA’s adopted finance plan. The CTC schedule is included in Appendix C.

In July 2006, BATA approved the establishment of a Joint Power Authority (JPA) consisting of the Metropolitan Transportation Commission (MTC) and BATA for the financing of the payment contributions from the CTC schedule. The JPA is named the Bay Area Infrastructure Financing Authority (BAIFA). In September 2006, BAIFA approved the issuance of \$1.1 billion in State Payment Acceleration (SPAN) bonds to finance the state contributions as outlined in the CTC schedule included in Appendix C to this report.

## Project Status

### Completed Projects

Seismic retrofit and project close-out has been completed on the Benicia-Martinez, Carquinez, San Mateo-Hayward, Richmond-San Rafael, Vincent Thomas, San Diego-Coronado toll bridges and on the west span of the SFOBB. See *Table 8-Cost Comparison AB 144/SB 66, Third Quarter 2006 Forecast and Expenditures through September 2006 for Completed Bridges*. As discussed above, the Richmond-San Rafael Bridge project expenditures have not been completely closed because Caltrans is in discussions with regulatory agencies regarding potential mitigations for impacts on fish in the project area.

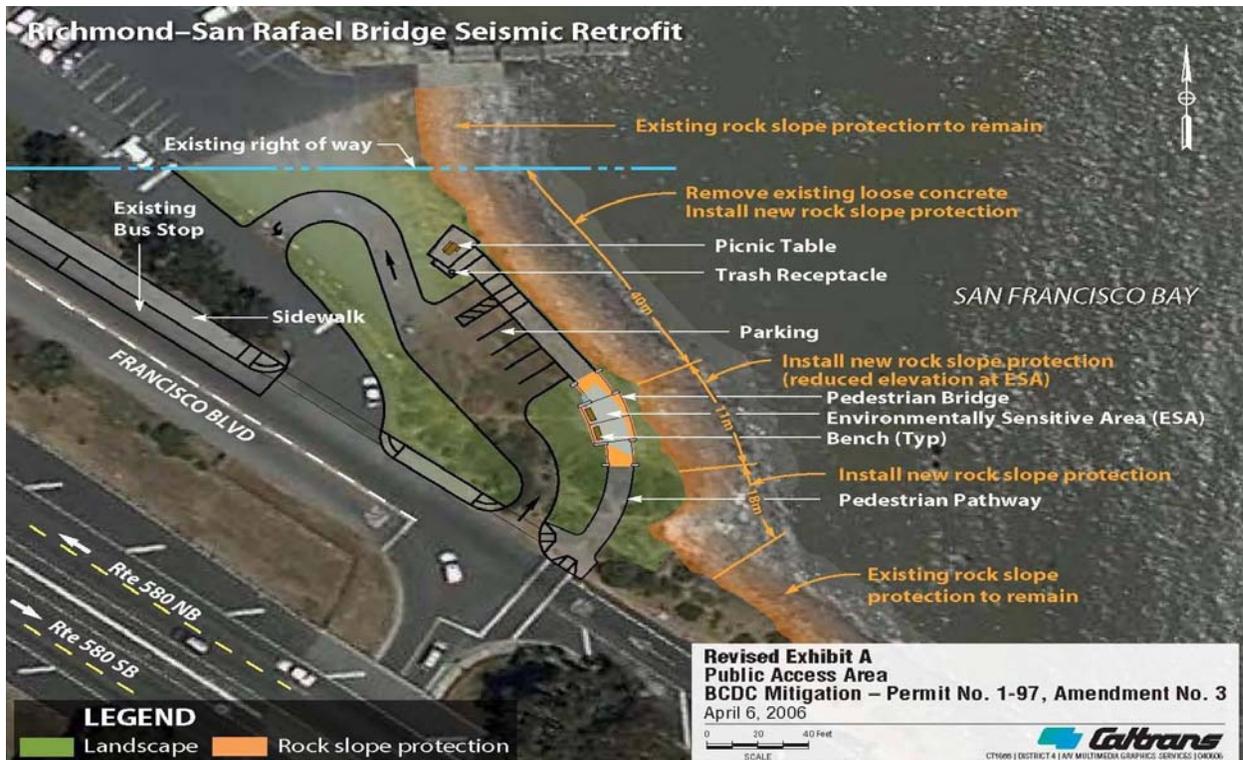
**Table 8-Cost Comparison AB 144/ SB 66, Third Quarter 2006 Forecast and Expenditures through September 30, 2006 for Completed Bridges (\$ million)**

Project	AB 144/ SB 66 Budget	Approved Changes	Current Approved Budget	Cost To Date (09/2006)	3 <sup>rd</sup> Quarter 2006 Forecast	Variance
a	b	c	d = b + c	e	f	g = f - d
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit Project	307.9	-	307.9	301.0	307.9	-
Carquinez Bridge Retrofit Project	114.2	-	114.2	114.2	114.2	-
Benicia-Martinez Bridge Retrofit Project	177.8	-	177.8	177.8	177.8	-
San Mateo-Hayward Bridge Retrofit Project	163.5	-	163.5	163.4	163.5	-
Richmond-San Rafael Bridge Retrofit Project	914.0	(89.0)	825.0	789.3	825.0	-
Vincent Thomas Bridge Retrofit Project	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit Project	103.5	-	103.5	102.6	103.5	-
<b>TOTAL</b>	<b>1839.4</b>	<b>(89.0)</b>	<b>1,750.4</b>	<b>1,706.7</b>	<b>1,750.4</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects. Capital Outlay Support and Capital Outlay have been combined. Although seismic retrofit of the Richmond-San Rafael and San Diego-Coronado bridges are complete, environmental mitigation/monitoring work is still ongoing.*

Caltrans has issued for advertisement the project plans and specifications for a public access lot on the Marin side of the Richmond-San Rafael bridge to comply with a Bay Conservation and Development Commission (BCDC) permit condition. The Richmond-San Rafael Public Access Project will provide public access to the Bay shoreline at the north end of the Richmond-San Rafael Bridge in Marin County. The project includes a six-car parking area, a ten-foot wide shoreline trail and pedestrian bridge, picnic tables and benches. In addition, new rock slope protection will be placed at the bay shore to protect against erosion, and drought tolerant landscaping will be planted to enhance the overall appearance of the project. The planting will be irrigated with an automatic irrigation system. The project will allow immediate access to the shoreline for motorists, bicyclists, and pedestrians to enjoy walking, picnicking, fishing, and the picturesque views across the Bay. All permits from other public

agencies including the U.S. Army Corps of Engineers have been secured. A Letter of Concurrence has been received from the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. This project was advertised on October 2, 2006, and bids were opened on November 1, 2006. To close out the Richmond-San Rafael Seismic Retrofit Project, Caltrans faces potential exposures concerning the environmental mitigation for negative impacts on fish, which is currently being discussed with regulatory agencies. Final savings for the Richmond-San Rafael Bridge project will be based on the resolution of pending negotiations with environmental permitting agencies regarding the cost of pile driving mitigation. The project cost savings in the amount of \$89 million has been transferred to the Toll Bridge Seismic Retrofit Program Contingency, as directed by the TBPOC.



## Ongoing Construction Projects

### SFOBB West Approach

The SFOBB west approach seismic retrofit project will remove and replace the west approach to the SFOBB, which includes all of the westbound mainline and most of the eastbound mainline from 4<sup>th</sup> Street to the SFOBB west anchorage, and all of the connecting entrance and exit ramps in downtown San Francisco. The construction work, which began in June 2003, is approximately 72 percent complete. Completion of this project is scheduled for 2009.

Upon completion of the retrofit project, the west approach mainline and ramps will maintain same number of traffic lanes, but with improved highway geometrics. The mainline eastbound and westbound structures will be adjacent to each other at 4<sup>th</sup> Street and transition to a double-deck configuration from Rincon Hill to the anchorage in order to tie into the existing SFOBB.

### Milestones Achieved

Seismic retrofit construction continued throughout the project during the reporting period. Major ongoing work included continued work on the piles for the permanent eastbound Interstate-80 mainline structures, the completion of all interim mainline structure piles, the 5th Street and Harrison Street off ramps, the 4th Street retrofit work, falsework erection and reconstruction for Frame 8U (North), and falsework erection for Frame 8U (South). On August 31, 2006, the upper deck was re-striped into a new lane configuration, which will be in place until the final stage of the project, when the permanent configuration will be completed. Additional progress was made on work leading to the re-opening of Beale Street to vehicular traffic by mid-October 2006.

A highlight for this project during the Third Quarter was the demolition of Frames 7U (South), 8U

(South) and a portion of 6U, that occurred from just before midnight on Friday, September 1, 2006, to just before 5:00 a.m. on Tuesday, September 5, 2006. The lower deck of the SFOBB was closed to accommodate the demolition of the upper deck. Demolition operations commenced without incident and were actually completed about 35 minutes ahead of schedule. Caltrans monitored dust levels during demolition, which were within the legal health standards set by the state. Bay Area Rapid Transit (BART) maintained 24-hour service for the benefit of the public, and additional ferry services were provided. Buses operated by Amtrak, San Francisco Muni and Alameda County Transit District (AC Transit), were also allowed every hour through the demolition to keep the mass transit links available throughout the weekend. The intent of this extended weekend closure was to reduce travel impacts to the public, as well as to compress the demolition time from the originally planned nine weekends to a single long weekend. Doing this also mitigated 130 days of project delay.

This extended weekend closure allowed for various other construction operations besides those on the West Approach Project. Approximately 300 pieces of equipment and 400 workers were mobilized from across the U.S. and were deployed across the Bay Bridge corridor to work on the bridge from 7<sup>th</sup> street in San Francisco, to the Oakland Toll Plaza.

### Project Funding

The AB 144/SB 66 baseline budget totals \$429 million for the project with \$309 million for CO and \$120 million for COS. See *Table 9-Baseline and Estimated Budget Need for SFOBB West Approach*.

**Table 9-Baseline and Estimated Budget Need for SFOBB West Approach (\$ million)**

	AB 144/ SB 66 Budget	3rd Quarter 2006 Forecast	Difference
COS	120.0	120.0	-
CO	309.0	309.0	-
<b>Total</b>	<b>429.0</b>	<b>429.0</b>	<b>-</b>

## Major Risk Issues

Caltrans' west approach Risk Response Team is continuing with its efforts to manage project risks. Updated risk assessments have been regularly performed during the Third Quarter as a standard project management practice.

Lessons learned to this point in the project continue to be important aspects of the implementation plans designed to mitigate risk:

- Purchasing additional BART and ferry services during impacted hours proved to be a successful mitigation effort, and were used during demolition operations completed during June 2006 and Labor Day Weekend 2006. Approximately \$2.0 million for these types of services was included in the AB 144/SB 66 project budget.
- The aggressive informational campaigns have proven successful in keeping the public fully informed of upcoming demolition operations that would affect traffic, thereby mitigating adverse public perception.
- Equipment and labor resources were increased during low traffic times such as nights and weekends. This strategy reduced inconveniences to the surrounding residents and businesses and minimized impact to the regional motorists, while maintaining the level of production required for the project to remain on the target schedule. The Labor Day Weekend 2006 demolition operation not only condensed work from nine weekends to a single long weekend for this project, it also proved beneficial to advancing the ongoing work for the entire east span corridor.
- A high-priority risk issue on the SFOBB West Approach project is currently being addressed by Caltrans concerns investigation and testing for the identification of pile anomalies that must be completed in a timely manner so as to avoid construction impact. To respond to this risk, Caltrans Construction staff coordinates closely with Structure Design and Materials Engineering and Testing Service (METS) daily on pile investigation and testing issues, and proactively monitors this effort. Tracking of the testing effort is done at the individual pile level of detail. Team participation in risk management meetings has proven to be valuable in addressing this issue.



*West Approach Traffic Overview*

## **SFOBB East Span Seismic Replacement**

The SFOBB East Span Seismic Replacement project will be seismically retrofitted through the complete replacement of the existing span. The project includes construction of the Skyway portion of the bridge (See *SFOBB East Span Replacement Project* picture below), which consists of two parallel concrete structures, each approximately 1.3 miles in length; a SAS bridge consisting of a 510-foot tower supporting a bridge deck connecting the Skyway bridge to YBI, transition structures on YBI and on the east end of the bridge connecting to the toll plaza area, and demolition of the existing east span. The SFOBB east span project now consists of 19 contracts. Note that the east end connection to the toll plaza, also known as the OTD contract, was split into four contracts by the TBPOC to facilitate construction flow. Splitting this contract will remove elements of the OTD construction from the critical path for completion of the new east span. Also, the YBITS contract will be split in the future into three contracts for reasons discussed below.

The current 19 SFOBB east span contracts are identified below:

Eight contracts are **complete**:

- Interim Retrofit (Existing Bridge)
- East Span Retrofit (Existing Bridge)
- Pile Installation Demonstration
- OTD Geofill
- YBI Archaeology
- United State Coast Guard (USCG) Road Relocation on YBI

- SAS Land Foundations (W2)
- YBI Electrical Substation

Five contracts are under **construction**: Note that percent complete figures for construction contracts are based on actual payments made divided by the contract amount.

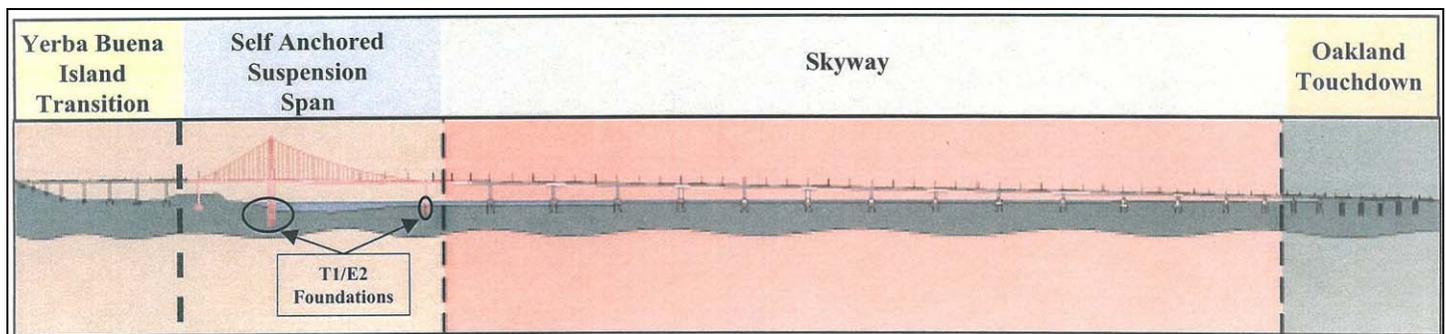
- Skyway contract (93 percent complete)
- South/South Detour (39 percent complete)
- SAS Marine Foundations (E2/T1) (54 percent complete)
- SAS (ten percent complete)
- Stormwater Treatment Measures (24 percent complete)

One contract is in **bid evaluation**:

- OTD Submarine Cable Relocation contract: The contract was advertised in July 2006. A single bid was opened on September 19, 2006. The single bid exceeded the engineer's estimate for the project. This contract will be re-bid.

Seven contracts are in **design**:

- OTD #1 contract: The contract is planned to be advertised in early 2007.
- OTD #2 contract: The contract is planned to be advertised in summer 2010.
- OTD portions of the corridor electrical contract: This scope may be executed as a separate contract, or alternatively, may be included within OTD #2 contract and/or the other contracts within the east span corridor.



*SFOBB East Span Replacement Project*

- YBITS #1 (design 80 percent complete to date)
- YBITS #2 (design 80 percent complete to date)
- YBITS #3 contract
- Existing Bridge Demolition design (ten percent complete to date)

months; this would likewise reduce the overall east span corridor schedule by six months if achievement of the incentive is successful.

The forecast completion date as compared to the AB 144/SB 66 baseline completion date for each of the major components of the SFOBB East Span Seismic Replacement project is shown in *Table 10-SFOBB East Span Seismic Replacement Project Schedule Summary* below.

The completion of the Skyway contract has been revised from April 2007 to December 2007 as approved by the TBPOC due to a Contract Change Order executed with the Contractor that resolves a variety of construction issues. This change in this contract’s completion date will not delay the open-to-traffic for the new east span. The schedule for the YBI SSD contract has been affected by the 12-month change to the SAS contract schedule. This delay is not expected to impact the new east span open-to-traffic date.

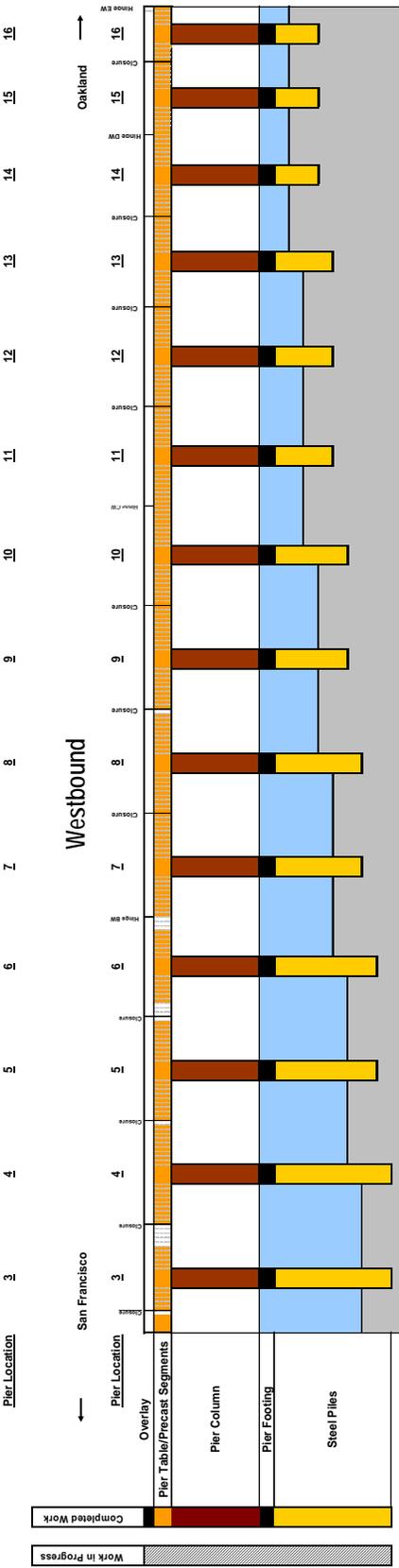
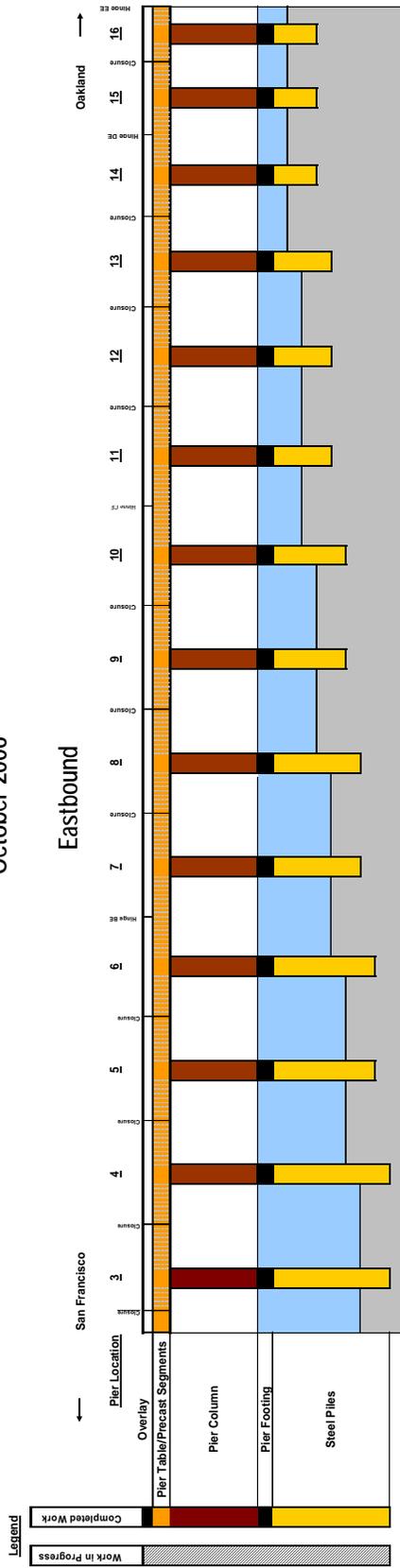
The approved east span opening date has been delayed by 12 months due to the TBPOC approval and Caltrans’ issuance of Addenda #5 and #7 to the SAS contract. Note that Addendum #7 provided for an early completion incentive that has the potential for reducing the SAS contract duration by six

**Table 10-SFOBB East Span Seismic Replacement Project Schedule Summary**

Contract	AB 144/SB 66 Baseline Pro	Approved Changes	Current Approved Schedule	3rd Quarter 2006 Forecast Project Completion Date	Variance (Months)
Skyway	Apr-07	8	Dec-07	Dec-07	-
YBI South / South Detour	Jul-07	-	Jul-07	TBD	TBD
Stormwater Treatment Measures	Mar-08	-	Mar-08	Jun-07	(9)
SAS E2/T1 Foundations	Jun-08	(3)	Mar-08	Mar-08	-
Open to Traffic: Westbound	Sep-11	12	Sep-12	Sep-12	-
SAS Superstructure	Mar-12	12	Mar-13	Mar-13	-
Open to Traffic: Eastbound	Sep-12	12	Sep-13	Sep-13	-
Oakland Touchdown	Nov-13	12	Nov-14	Nov-14	-
◆ OTD Submarine Cable	N/A		Jul-07	Oct-07	3
◆ OTD Westbound	N/A		Jul-09	Oct-09	3
◆ OTD Eastbound	N/A		Nov-14	Nov-14	-
YBI Transition Structures	Nov-13	12	Nov-14	Nov-13	-
Existing Bridge Demolition	Sep-14	12	Sep-15	Sep-15	-

*Note: The new east span forecast to be fully open to traffic in September 2013. Construction activities will continue beyond that date to complete the project, including demolition of the existing structure.*

San Francisco-Oakland Bay Bridge East Span Replacement Project - Skyway Contract  
 October 2006



## Milestones Achieved – East Span Contracts

- The Skyway contract is 93 percent complete as of September 2006. The foundation work is complete with the exception of installing fenders around six of the pier footings. Four fenders have been completed; the remaining fenders are scheduled to be completed by October 2006. The eastbound structure is 100 percent complete with the erection of all segments, while the westbound structure has erected 216 of the 226 segments (96 percent) with ten segments remaining to be erected. A total of 442 segments (98 percent) have been installed to date. Erection activities are underway at westbound Piers 3 and 6 (refer to diagram on page 23).
- On August 29, 2006, the westbound steel transition tub from the skyway to the SAS span was lifted into place without incident. Like the eastbound tub that was lifted into place last year, this tub will be supported with temporary towers until the SAS is ready. The tub lifts are among the heaviest lifts ever by Caltrans. Bike path cantilever beam installation is complete and the installation of the road bed panel segments is currently 60 percent complete.
- An overall settlement has been reached with the Contractor to resolve all cost and schedule impacts posed by claims related to hinge pipe beam fabrication, service platforms, electrical appurtenances, polyester concrete overlay, modular joints and other tasks to be completed. A time extension of 220 working days, extending the project completion date to December 2007 has been approved by the TBPOC. The change in schedule to the Skyway contract will not delay the open-to-traffic date for the new East Span project, nor will this settlement negatively impact the overall budget for the Skyway contract or the project. Various Notices of Potential Change (NOPC's) have been issued by the Contractor on behalf of their Steel Orthotropic Box Girder (SOBG) fabrication subcontractor concerning issues related to that work scope that has been completed. All of these NOPC's have been recommended to be heard by the Dispute Review Board.
- The E2/T1 contract is 54 percent complete as of September 2006. Pile driving for the East Pier (E2) piles has been completed, as has the fabrication of the steel pile top sections for East Pier. Resumption of the Tower Pier (T1) pile drilling operations is expected pending receipt of permanent pile casing material. Fabrication of the permanent steel casings for the Tower Pier piles and the Tower Pier footing box continues.
- Caltrans is addressing risks posed by potentially differing site conditions at the Tower Pier rock socket through lessons-learned at the Benicia-Martinez Bridge. This information has been gained through substantial foundation exploration performed during design, and through the use of a conservative design, which may allow for variations during pile construction. Risks associated with potential differing site conditions at the Tower Pier casings are also being addressed through data gained from foundation exploration, use of a conservative design, flexibility in the casing installation sequence, and, if necessary, ensuring that extra casing or steel plate material is on hand.
- The SFOBB East Span Seismic Replacement Project SAS Superstructure contract is ten percent complete, based on payments to the Contractor, as of September 2006. The Contractor is mobilizing staff to the field office on Pier 7 in Oakland. Development of various administrative submittals, including the baseline schedule, is continuing. Four working drawings have been received for review. The Contractor is finalizing agreements with manufacturers, fabricators, suppliers and subcontractors, and signed a contract with ZPMC, of Shanghai, China, on July 18, 2006. Caltrans is working to

set up facilities and to organize resources in China that will ensure an effective Owner's presence in the steel fabrication shops operated by ZPMC. Caltrans is also taking risk mitigation measures to address potential issues during construction due to structural steel plate conflicts and welding methods.

- The Stormwater Treatment Measures contract is 24 percent complete as of September 2006. The current schedule forecast reflecting an earlier completion date than the approved schedule is due to the combination of an early contract award date and the shorter construction duration bid by the Contractor. Work continues on installation of drainage structures, installation of ductile iron pipe, and installation of pump stations. The Stormwater Project was required as part of the environmental mitigation package for the SFOBB Seismic Safety Project by the Regional Water Quality Control Board. The Stormwater Project will reduce the concentration of stormwater runoff pollutants including industrial chemicals, asbestos from brake pads, hydrocarbons, and heavy metals, from entering into the adjacent Emeryville Crescent. The Emeryville Crescent is a 558-acre tidal marsh and cove that supports up to 14,000 shorebirds and thousands of other birds, including the endangered clapper rail which nests and forages in the vegetative cover of the marsh. This area has been described as supporting the largest number of shorebird species regularly occurring at one place within San Francisco Bay (Bodega Bay Institute, 1978). The Stormwater Project will provide water treatment of at least 85% of the average annual runoff from a 155-acre shed area in the vicinity of the SFOBB Toll Plaza. By removing toxins from the SFOBB runoff, Caltrans will enhance the habitat quality of the Emeryville Crescent and by extension, the San Francisco Bay.
- Design on the Existing Bridge Demolition contract is ten percent complete. Design work has been temporarily suspended to assign

engineering resources to higher priority tasks, and will resume at a later time. The contract schedule completion date has been extended by 12 months due to a 12-month SAS contract extension.



*Concrete Apron for Drainage System: Stormwater Treatment Measure Contract*

### **Yerba Buena Island Contracts**

- The YBI SSD contract work is 39 percent complete as of September 2006. Caltrans and its consultants are designing the East and West tie-in's. The construction of the tie-in's are being temporarily suspended and has been managed in conjunction with the SAS schedule to minimize impacts to the traveling public. The suspension of the tie-in work has necessitated additional design enhancements to the viaduct segment to allow it to stand in place alone for a longer duration. The transfer of steel from the fabricator, Shanghai Grand Towers, Ltd. to Dongkuk S&C of South Korea has been completed. Shop drawings for the viaduct structure are currently in progress. Concurrently, Dongkuk S&C is in the process of preparing the Welding Quality Control Plan for approval.

- The YBITS #1 contract will construct the mainline YBITS that will connect the SAS portion of the new bridge to the existing YBI tunnels and all work required to place traffic onto the new bridge. Preparation of PS&E packages is currently underway. The decision on the SSD final design will impact design work on this contract.
  - The YBITS #2 contract includes demolition of the South/South Detour (SSD) temporary structure, seismic retrofit of the existing YBI viaduct, completion of the new eastbound on-ramp, completion of the bike path section at YBI and reconstruction of local and affected facilities at YBI. The majority of the design work is complete. Preparation of detailed plans and quantity calculations are in progress. Design work on the existing viaduct retrofit is pending a decision on work in the SSD contract. A decision on the SSD final design will impact design work on this contract.
  - The YBITS #3 contract is for landscaping, and includes slope restoration, vegetation restoration and plant maintenance for the areas affected by YBI construction. A planting concept and preliminary plans have been developed for majority of the area. Determination of the extent of the U.S. Coast Guard area to be landscaped is still pending. Development of the final plans has not been completed.
- power to the island is close to foundation work necessary for the construction of the OTD #1 contract, which is expected to advertise in early 2007.
- The OTD #1 contract includes construction of all of the marine foundations, westbound bridge section and roadway approach for the section that connects the new Skyway portion to the roadway west of the Oakland Toll Plaza. Design work is complete. PS&E were submitted to the Caltrans Office Engineer on September 1, 2006. The advertisement for bidders for this contract is scheduled for early 2007 and contract completion is scheduled for October 2009.
  - The OTD #2 contract includes construction of the remaining eastbound bridge section and roadway approach for the section that connects the new Skyway portion to the roadway west of the Oakland Toll Plaza. This work will occur once the westbound traffic is shifted onto the new SAS. Design work for the structures portion of the OTD #2 contract is complete. Design work on the roadway portion is ongoing.
  - A fourth contract could incorporate most of the electrical elements from OTD, as well as from other segments of the east span into a single contract and is currently being scoped. The inclusion of this work into another existing contract is also being considered.

### **Oakland Touchdown Contracts**

- The OTD Submarine Cable contract will replace the existing submarine electrical cable from Oakland to Treasure Island. This contract was advertised for bids on July 31, 2006. On September 19, 2006, Caltrans received a single bid of \$13.1 million for this contract, which was \$6.4 million (+97.2%) higher than the \$6.6 million engineer's estimate. The cable relocation contract will place a new electrical cable between the East Bay and Treasure Island because the existing electrical cable providing

## Project Funding

### Baseline and Projected Budget and Schedule

The AB 144/SB 66 baseline budget for the SFOBB east span is \$5.486 billion with \$4.527 billion for CO and \$959.3 million for COS. This amount does not include program contingencies. See *Table 11-SFOBB East Span Replacement Cost Summary*.

The TBPOC re-evaluates project and contract cost forecasts continuously. The estimate-at-completion as of September 30, 2006, includes revised forecasts from AB 144/SB 66 budget, as follows:

- A forecast increase in the cost of COS to \$977.1 million as a result of a detailed staffing and consultant contract cost forecast completed as of the end of the First Quarter 2006. This forecast includes considerations of revised and increased construction contract schedules as mentioned elsewhere in this report that require coverage by staff and consultants.
- A forecasted \$13.7 million increase for the SAS Superstructure contract to cover actions taken to encourage additional bidders for the project, including the bidder's stipend for the lowest three responsive bidders.
- A forecasted \$19.2 million increase for the YBITS contract due to a higher estimate for electrical work and scheduling.
- A forecasted \$18.7 million increase in the CO for the OTD contract due to an approved

**Table 11-SFOBB East Span Replacement Cost Summary (\$ Millions)**

Contract	AB 144/ SB 66 Budget	Approved Changes	Current Approved Budget	Cost To Date (09/2006)	3rd Quarter 2006 Forecast	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	959.4	-	959.4	450.3	977.1	17.7
Capital Outlay	-	-	-	-	-	-
Skyway	1,293.0	-	1,293.0	1,092.4	1,293.0	-
SAS Superstructure	1,753.7	-	1,753.7	141.2	1,767.4	13.7
SAS E2/T1 Foundations	313.5	-	313.5	169.2	313.5	-
YBI Transition Structures	299.3	-	299.3	-	318.5	19.2
Oakland Touchdown	283.8	-	283.8	-	302.5	18.7
◆ OTD Submarine Cable				-	9.6	
◆ OTD Westbound				-	226.5	
◆ OTD Eastbound				-	62.0	
◆ OTD Electrical Systems				-	4.4	
YBI South/South Detour	131.9	-	131.9	35.3	152.2	20.3
Existing Bridge Demolition	239.2	-	239.2	-	222.0	(17.2)
Stormwater Treatment Measures	15.0	-	15.0	3.4	15.0	-
East Span Completed Projects	90.3	-	90.3	89.2	90.3	-
Right-of-Way and Environmental Mitigation	72.4	-	72.4	38.8	72.4	-
Other Budgeted Capital	35.1	-	35.1	1.5	11.0	(24.1)
<b>TOTAL</b>	<b>5,486.6</b>	<b>-</b>	<b>5,486.6</b>	<b>2,021.3</b>	<b>5,534.9</b>	<b>48.3</b>

Note: Details may not sum to totals due to rounding effects.

Engineer’s Estimate for the OTD #1 contract. The COS for the contract was also increased to cover the additional work to split the contract and to administer four separate contracts over a longer duration rather than the original single contract.

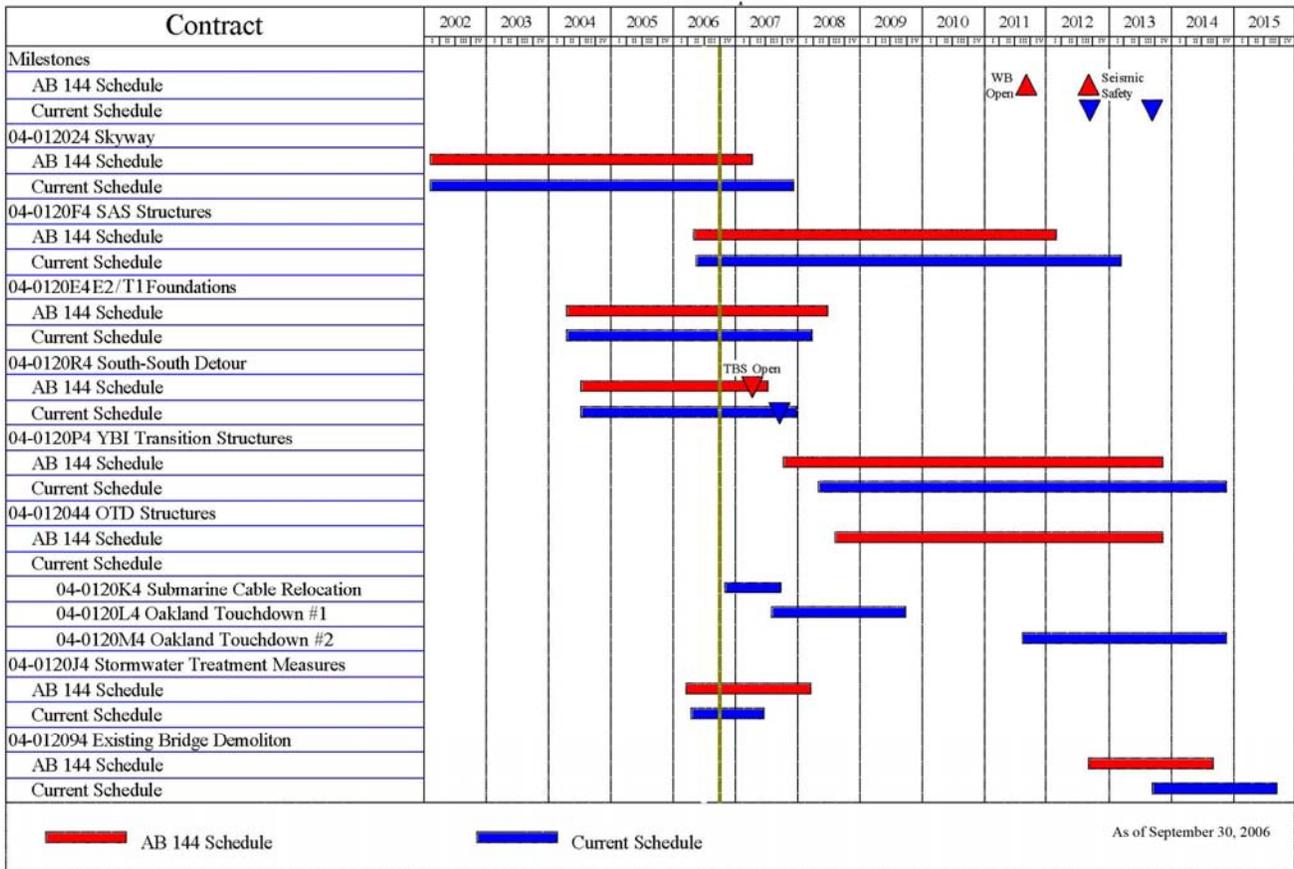
Demolition Contract due to a re-evaluation of the cost escalation rates for the project.

- A cost variance from the Current Approved Budget in the amount of \$20.3 million is forecast for the SSD contract due to issues related to a potential extension of the contract schedule to integrate it with the SAS contract schedule; the cost impact of possible risks associated with the roll-out of a portion of the existing bridge structure and the roll-in of a replacement span at the East tie-in; and the impact of potential risks related to the demolition of the existing structure.
- A forecast \$17.2 million decrease for the Bridge

All of the variances discussed above can be funded from a combination of other budgeted capital and Toll Bridge Seismic Retrofit Program Contingency. The forecast for the SFOBB east span has increased by \$48.3 million to \$5.535 billion.

The AB 144/SB 66 baseline schedule for seismically retrofitting the structure and opening the bridge to traffic in both directions was 2012. However, the opening date has been revised to 2013 due to the TBPOC approval and Caltrans issuance of Addenda #5 and #7 to the SAS contract. The SAS Addendum #7 also provided for a six-month early completion incentive; although the current schedule forecast does not reflect achievement of this incentive, schedule planning for the OTD and

**Chart 2-San Francisco-Oakland Bay Bridge East Span Corridor Schedule Baseline AB 144/SB 66 vs. Current Projected**



YBITS is being done so as to respond to this possibility. Other schedule impacts to the Skyway and YBI South-South Detour contracts have been discussed above.

The comparison of the AB 144/SB 66 baseline schedule and the current projected schedule is shown in *Chart 2-SFOBB East Span Corridor Schedule, Baseline AB 144/SB 66 vs. Current Projected*. It should be noted that the schedules shown in *Chart 2* do not at this time account for the potential “worst-case” issues that may affect the schedule identified in the SFOBB East Span Seismic Retrofit Project Risk Management Plan.

## Major Risk Issues

### SFOBB East Span Project Replacement Risk Management Plan

Caltrans continues to implement comprehensive risk management on all SFOBB East Span Seismic Replacement Project contracts in accordance with AB 144. Currently, Caltrans and BATA have embarked on an initiative to manage risk jointly. Risk response efforts continue to focus on encouraging responsive bids for future contracts and mitigating the estimated cost/schedule impact of identified risks.

### Quarterly Environmental Compliance Highlights

SFOBB east span environmental tasks for the current quarter are focused on mitigation monitoring. All weekly, monthly, and annual compliance reports to resource agencies have been delivered on time with no comments from receiving agencies. Key successes this quarter include:

- Falcons were observed near East Pier of the existing bridge during July and it was assumed that there was a successful nesting attempt. On July 31, biologists from the Santa Cruz Predatory Bird Research Group arrived to remove nestlings from the nest site. The

biologists found and removed one male peregrine falcon nestling from the site.

- Turbidity monitoring was conducted without incident during pile clean out at East Pier. Monitoring is not scheduled to occur again until work on Tower Pier resumes in February 2007.
- The Air Bubble Curtain and Marine Mammal Monitoring were performed without incident. Marine mammal monitoring for the Piers E2/T1 Marine Foundations Contract was completed on September 21.
- Monitoring of the one-year eelgrass pilot program at the North Basin site was completed in July. The results are currently being analyzed.
- Weekly clapper rail surveys on the Emeryville Crescent were conducted during the nesting season, which ended August 31. There were four observations of clapper rails, but they were not affected by construction of Stormwater Treatment Measures.



*View of the Western End of the Skyway Contract that will connect with the Future SAS Contract.*

## Other Toll Bridges

### Dumbarton and Antioch Bridges

The original design of the Dumbarton and Antioch Bridges were based on design criteria developed after the 1971 San Fernando Earthquake. In the early 1990's, Caltrans determined that these two structures had the seismic resistant features required by the post 1971 codes and were not likely to be vulnerable during a major seismic event. Since that time, Caltrans has pursued an aggressive seismic research program, and based on the results of this program, significantly revised its seismic design practice in the late 1990's. Consistent with recommendations by the Caltrans Seismic Advisory Board, Caltrans regularly reassesses the seismic hazard and performance of its bridges. Due to the tremendous changes in seismic design practice that have occurred since the design of the Dumbarton and Antioch bridges, a comprehensive assessment of the potential need and scope for seismic retrofit based on current knowledge is planned.

### Previous Reports

A number of limited studies have been made of these bridges in the past. However, none of the studies have fully assessed the seismic performance of the structures under current standards.

### Vulnerability Studies

In late 2004, Caltrans initiated vulnerability studies on the Dumbarton and Antioch bridges. The purpose of these studies was to determine if the bridges would meet current seismic performance standards. The studies were essentially completed in May 2005. They were not a complete global analysis, but rather an investigation of selected bents modeled as independent structures. The analysis was limited in scope and based on as-built plans and currently available geotechnical information. The superstructure response was not analyzed.

The Dumbarton and Antioch Bridges have many seismic resistant features, and the results of the vulnerability studies indicate that the bridges should perform well in a moderate seismic event. However, during a major seismic event, some potential vulnerabilities (summarized below) become apparent.

- Foundation response generally governs performance. The piles may plunge axially and potentially cause permanent footing rotations.
- Potentially large foundation displacements and rotations may result in deformations that can't be easily repaired.
- The bent cap, pile cap, pile and superstructure are not capacity protected by the ductile columns and, as a result, these elements may be damaged in a major event, especially if the foundation is retrofitted.

Given the limitations of the studies, there was insufficient evidence to conclusively determine the performance of the bridges during a maximum credible earthquake (MCE). While the Dumbarton and Antioch bridges may meet performance standards, a more comprehensive technical study is necessary to understand the performance of these structures during an MCE event. A study of this level is necessary to accurately determine the structures' response and to develop any necessary retrofit strategies. A comprehensive geotechnical study using the latest analysis techniques is likely necessary in order to perform this level of analysis.

### Sensitivity Analysis

As a follow-up to the Vulnerability Study, a sensitivity analysis was completed on a single representative bent used in the Vulnerability Study (Bent 23 of the Dumbarton Bridge). The goal of the analysis is to determine the structural response associated with uncertainties in the geotechnical data. An envelope of soil conditions (best-case and worst case scenarios) was used in the analysis. The results of the Sensitivity Analysis will be used to

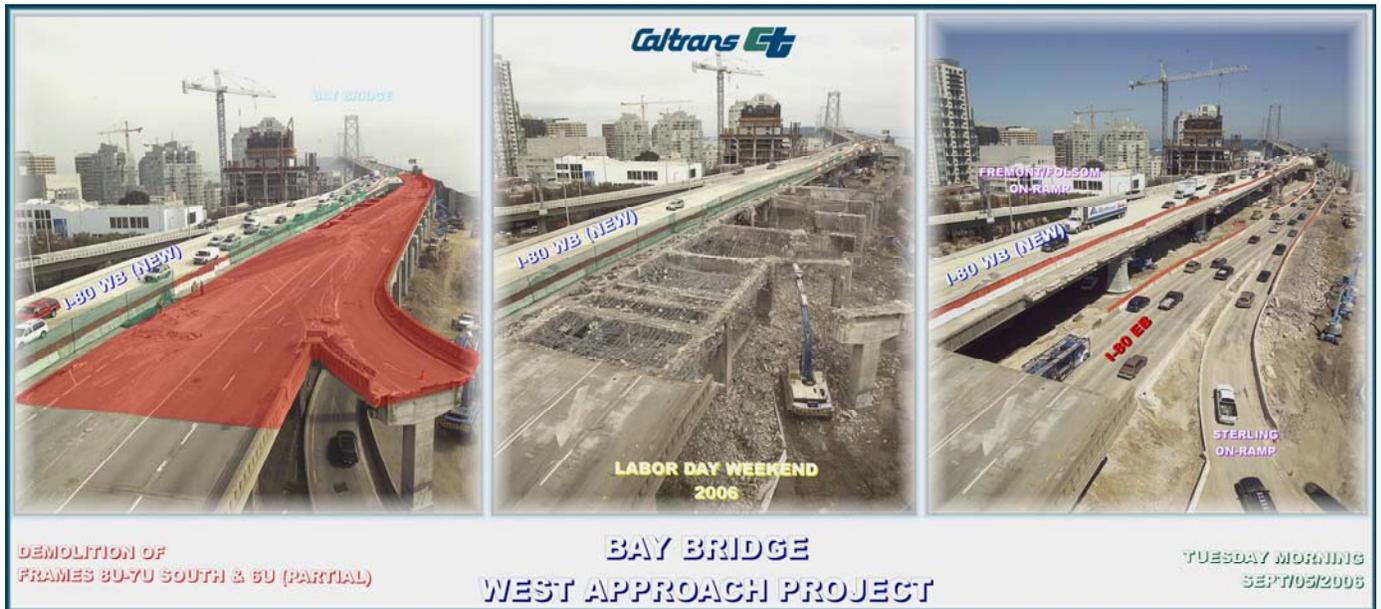
determine the scope and value of conducting further geotechnical studies.

The preliminary results from the sensitivity analysis indicate that the seismic response of the bridge is largely dependant on the soil conditions and that a comprehensive geotechnical investigation is essential for understanding the bridge's performance during a major seismic event. A work plan was developed to assess the extent of geotechnical work needed for a complete seismic analysis and to assess the required performance levels for each structure. Caltrans has completed the value analysis to scope the geotechnical investigation which will be required to complete the strategy. The final report was issued on July 24, 2006.

### Cost and Schedule

A preliminary cost estimate, schedule, and an initial risk analysis have been developed to complete a comprehensive seismic analysis for each bridge. The preliminary estimate and schedule were developed as a baseline assuming a complete geotechnical and geophysical investigation is required at each bridge.

At its June 14, 2006 meeting, BATA approved \$17.8 million in funding to proceed with this comprehensive seismic analysis. In September, 2006, BATA selected Earth Mechanics as the Consultant for the Phase 1 Geotechnical Investigation. BATA entered into a contract with the Consultant on September 26, 2006. It is expected that field work will commence in November 2006.



West Approach

## **Appendices**

- A. TBSRP All Bridges AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures through September 30, 2006 (A-1 and A-2).
- B. TBSRP East Span Only AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures through September 30, 2006.
- C. CTC First Quarter Schedule.
- D. Project/Contract Photographs.

**Appendix A-1.**

<b>Toll Bridge Seismic Retrofit Program</b>						
<b>AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures Through September 2006</b>						
(\$ millions)						
<b>Bridge</b>	<b>AB 144/SB 66 Baseline</b>	<b>TBPOC Current Approved Budget</b>	<b>2nd Quarter 2006 Forecast</b>	<b>3rd Quarter 2006 Forecast</b>	<b>Variance 3rd 2006 - 2nd 2006</b>	<b>Expenditures Through Sept. 2006</b>
<b>Benicia-Martinez</b>						
Capital Outlay Support	38.1	38.1	38.1	38.1	-	38.1
Capital Outlay	139.7	139.7	139.7	139.7	-	139.7
Total	177.8	177.8	177.8	177.8	-	177.8
<b>Carquinez</b>						
Capital Outlay Support	28.7	28.7	28.7	28.7	-	28.8
Capital Outlay	85.5	85.5	85.5	85.5	-	85.4
Total	114.2	114.2	114.2	114.2	-	114.2
<b>San Mateo-Hayward</b>						
Capital Outlay Support	28.1	28.1	28.1	28.1	-	28.1
Capital Outlay	135.4	135.4	135.4	135.4	-	135.3
Total	163.5	163.5	163.5	163.5	-	163.4
<b>Vincent Thomas</b>						
Capital Outlay Support	16.4	16.4	16.4	16.4	-	16.4
Capital Outlay	42.1	42.1	42.1	42.1	-	42.0
Total	58.5	58.5	58.5	58.5	-	58.4
<b>San Diego-Coronado</b>						
Capital Outlay Support	33.5	33.5	33.5	33.5	-	33.2
Capital Outlay	70.0	70.0	70.0	70.0	-	69.4
Total	103.5	103.5	103.5	103.5	-	102.6
<b>Richmond-San Rafael</b>						
Capital Outlay Support	134.0	127.0	127.0	127.0	-	125.5
Capital Outlay	698.0	698.0	698.0	698.0	-	663.8
Richmond-San Rafael Project Reserves	82.0	-	-	-	-	-
Total	914.0	825.0	825.0	825.0	-	789.3
<b>West Span Retrofit</b>						
Capital Outlay Support	75.0	75.0	75.0	75.0	-	74.8
Capital Outlay	232.9	232.9	232.9	232.9	-	226.3
Total	307.9	307.9	307.9	307.9	-	301.1
<b>West Approach</b>						
Capital Outlay Support	120.0	120.0	120.0	120.0	-	83.6
Capital Outlay	309.0	309.0	309.0	309.0	-	212.5
Total	429.0	429.0	429.0	429.0	-	296.1
<b>SFOBB East Span</b>						
Capital Outlay Support	959.4	959.4	977.1	977.1	-	450.3
Capital Outlay	4,492.1	4,492.1	4,498.5	4,546.8	48.3	1,569.5
Other Budgeted Capital	35.1	35.1	11.0	11.0	-	1.5
Total	5,486.6	5,486.6	5,486.6	5,534.9	48.3	2,021.3
Program Indirect	30.0	30.0	30.0	30.0	-	24.7
Subtotal Capital Outlay Support	1,463.2	1,456.2	1,473.9	1,473.9	-	903.4
Subtotal Capital Outlay	6,321.8	6,239.8	6,222.1	6,270.4	48.3	3,145.4
Subtotal Toll Seismic Retrofit	7,785.0	7,696.0	7,696.0	7,744.3	48.3	4,048.8
Program Contingency	900.0	989.0	989.0	940.7	(48.3)	
<b>Total Toll Seismic Retrofit Program</b>	<b>8,685.0</b>	<b>8,685.0</b>	<b>8,685.0</b>	<b>8,685.0</b>	<b>-</b>	<b>4,048.8</b>

## Notes:

\* Budget for Richmond-San Rafael Bridge included \$16.9 million of deck joint rehabilitation work that considered to be eligible for seismic retrofit program funding. (Due to the rounding of numbers, the totals above are show within \$0.02).

## Appendix A-2.

<b>Toll Bridge Seismic Retrofit Program - SAS Alternative</b>					
<b>AB 144 Baseline Budget, Forecasts and Expenditures Through September 2006</b>					
Bridge	(\$ millions)				
	AB 144/SB 66 Baseline	Column B TBPOC Current Approved Budget See Note (3)	Column C Expenditures to date and Encumbrances As of Sep 30, 2006 See Note (1)	Column D Estimated Costs not yet Spent or Encumbered As of Sep 30, 2006	Column E Total Forecast As of Sep 30, 2006  (Columns C +D)
<b>Other Completed Projects</b>					
Capital Outlay Support	144.9	144.9	144.6	0.3	144.9
Capital Outlay	472.6	472.6	473.1	(0.4)	472.7
Total	617.5	617.5	617.7	(0.1)	617.6
<b>Richmond-San Rafael</b>					
Capital Outlay Support	134.0	127.0	125.6	1.4	127.0
Capital Outlay	780.0	698.0	671.9	26.1	698.0
Total	914.0	825.0	797.5	27.5	825.0
<b>West Span Retrofit</b>					
Capital Outlay Support	75.0	75.0	74.8	0.2	75.0
Capital Outlay	232.9	232.9	234.2	(1.3)	232.9
Total	307.9	307.9	309.0	(1.1)	307.9
<b>West Approach</b>					
Capital Outlay Support	120.0	120.0	85.3	34.7	120.0
Capital Outlay	309.0	309.0	295.4	13.6	309.0
Total	429.0	429.0	380.7	48.3	429.0
<b>SFOBB East Span -Skyway</b>					
Capital Outlay Support	197.0	197.0	150.2	46.8	197.0
Capital Outlay	1,293.0	1,293.0	1,248.6	44.4	1,293.0
Total	1,490.0	1,490.0	1,398.8	91.2	1,490.0
<b>SFOBB East Span -SAS- Superstructure</b>					
Capital Outlay Support	214.6	214.6	29.6	185.0	214.6
Capital Outlay	1,753.7	1,753.7	1,647.6	119.8	1,767.4
Total	1,968.3	1,968.3	1,677.2	304.8	1,982.0
<b>SFOBB East Span -SAS- Foundations</b>					
Capital Outlay Support	62.5	62.5	24.9	37.6	62.5
Capital Outlay	339.9	339.9	304.3	35.6	339.9
Total	402.4	402.4	329.2	73.2	402.4
<b>Small YBI Projects</b>					
Capital Outlay Support	10.6	10.6	10.2	0.4	10.6
Capital Outlay	15.7	15.6	17.1	(1.4)	15.7
Total	26.3	26.2	27.3	(1.0)	26.3
<b>South/South Detour</b>					
Capital Outlay Support	29.5	29.5	16.7	12.8	29.5
Capital Outlay	131.9	131.9	97.0	55.2	152.2
Total	161.4	161.4	113.7	68.0	181.7
<b>YBI - Transition Structures</b>					
Capital Outlay Support	78.7	78.7	10.6	68.1	78.7
Capital Outlay	299.3	299.4	0.1	318.4	318.5
Total	378.0	378.1	10.7	386.5	397.2
<b>Oakland Touchdown</b>					
Capital Outlay Support	74.4	74.4	22.5	69.6	92.1
Capital Outlay	283.8	283.8	0.1	302.4	302.5
Total	358.2	358.2	22.6	372.0	394.6
<b>East Span Other Small Project</b>					
Capital Outlay Support	212.3	212.3	195.1	17.3	212.3
Capital Outlay	170.8	170.8	90.4	56.2	146.6
Total	383.1	383.1	285.5	73.5	358.9
<b>Existing Bridge Demolition</b>					
Capital Outlay Support	79.7	79.7	0.2	79.5	79.7
Capital Outlay	239.2	239.2	-	222.0	222.0
Total	318.9	318.9	0.2	301.5	301.7
<b>Miscellaneous Program Costs</b>					
Miscellaneous Program Costs	30.0	30.0	24.7	5.3	30.0
<b>Total Capital Outlay Support (2)</b>	<b>1,463.2</b>	<b>1,456.2</b>	<b>915.0</b>	<b>558.9</b>	<b>1,473.9</b>
<b>Total Capital Outlay</b>	<b>6,321.8</b>	<b>6,239.8</b>	<b>5,079.8</b>	<b>1,190.6</b>	<b>6,270.4</b>
<b>Program Total</b>	<b>7,785.0</b>	<b>7,696.0</b>	<b>5,994.8</b>	<b>1,749.5</b>	<b>7,744.3</b>

(1) Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2) Total Capital Outlay Support includes Miscellaneous Program Costs.

(3) The TBPOC approved a budget reduction to the Richmond-San Rafael Project in October 2006 in the amount of \$89 million. See Appendix A-1.

(Due to the rounding of numbers, the totals above are shown within \$0.02).

## Appendix B.

### Toll Bridge Seismic Retrofit Program - SFOBB East Span Only AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures Through September 2006

East Span Contract	(\$ millions)					
	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (1)	2nd Quarter 2006 Forecast	3rd Quarter 2006 Forecast	Variance 3rd 2006- 2nd 2006	Expenditures Through September 2006
<b>SFOBB East Span -Skyway</b>						
Capital Outlay Support	197.0	197.0	197.0	197.0	-	147.7
Capital Outlay	1,293.0	1,293.0	1,293.0	1,293.0	-	1,092.4
Total	1,490.0	1,490.0	1,490.0	1,490.0	-	1,240.1
<b>SFOBB East Span -SAS- Superstructure</b>						
Capital Outlay Support	214.6	214.6	214.6	214.6	-	24.3
Capital Outlay	1,753.7	1,753.7	1,767.3	1,767.4	0.1	141.2
Total	1,968.3	1,968.3	1,981.9	1,982.0	0.1	165.5
<b>SFOBB East Span -SAS- W2 Foundations</b>						
Capital Outlay Support	10.0	10.0	10.0	10.0	-	9.2
Capital Outlay	26.4	26.4	26.4	26.4	-	25.8
Total	36.4	36.4	36.4	36.4	-	35.0
<b>SFOBB East Span -SAS- E2/T1 Foundations</b>						
Capital Outlay Support	52.5	52.5	52.5	52.5	-	14.5
Capital Outlay	313.5	313.5	313.5	313.5	-	169.2
Total	366.0	366.0	366.0	366.0	-	183.7
<b>YBI/SAS (Archeology)</b>						
Capital Outlay Support	1.1	1.1	1.1	1.1	-	1.1
Capital Outlay	1.1	1.1	1.1	1.1	-	1.1
Total	2.2	2.2	2.2	2.2	-	2.2
<b>YBI - USCG Rd Relocation</b>						
Capital Outlay Support	3.0	3.0	3.0	3.0	-	2.7
Capital Outlay	3.0	3.0	3.0	3.0	-	2.8
Total	6.0	6.0	6.0	6.0	-	5.5
<b>YBI - Substation &amp; Viaduct</b>						
Capital Outlay Support	6.5	6.5	6.5	6.5	-	6.4
Capital Outlay	11.6	11.6	11.6	11.6	-	11.3
Total	18.1	18.1	18.1	18.1	-	17.7
<b>South/South Detour</b>						
Capital Outlay Support	29.5	29.5	29.5	29.5	-	16.6
Capital Outlay	131.9	131.9	133.8	152.2	18.4	35.3
Total	161.4	161.4	163.3	181.7	18.4	51.9
<b>YBI - Transition Structures</b>						
Capital Outlay Support	78.7	78.7	78.7	78.7	-	10.6
Capital Outlay	299.3	299.3	318.5	318.5	-	-
Total	378.0	378.0	397.2	397.2	-	10.6
<b>Oakland Touchdown (Total, including the following split contracts and prior-to-split expenses)</b>						
Capital Outlay Support	74.4	74.4	92.1	92.1	-	22.1
Capital Outlay	283.8	283.8	272.7	302.5	29.8	-
Total	358.2	358.2	364.8	394.6	29.8	22.1
<b>Oakland Touchdown Contract No. 1</b>						
Capital Outlay Support	-	-	49.9	49.9	-	1.9
Capital Outlay	-	-	196.7	226.5	29.8	-
Total	-	-	246.6	276.4	29.8	1.9
<b>Oakland Touchdown Contract No. 2</b>						
Capital Outlay Support	-	-	15.8	15.8	-	0.2
Capital Outlay	-	-	62.0	62.0	-	-
Total	-	-	77.8	77.8	-	0.2

## Appendix B. (Cont'd.)

**Toll Bridge Seismic Retrofit Program - SFOBB East Span Only**  
**AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures Through September 2006**

(\$ millions)							
East Span Contract	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (1)	2nd Quarter 2006 Forecast	3rd Quarter 2006 Forecast	Variance 3rd 2006- 2nd 2006	Expenditures Through September 2006	
<b>Oakland Touchdown Electrical Systems</b>							
Capital Outlay Support	-	-	1.4	1.4	-	-	
Capital Outlay	-	-	4.4	4.4	-	-	
Total	-	-	5.8	5.8	-	-	
<b>Oakland Touchdown Submarine Cable</b>							
Capital Outlay Support	-	-	3.0	3.0	-	0.2	
Capital Outlay	-	-	9.6	9.6	-	-	
Total	-	-	12.6	12.6	-	0.2	
<b>Oakland Geofill</b>							
Capital Outlay Support	2.5	2.5	2.5	2.5	-	2.5	
Capital Outlay	8.2	8.2	8.2	8.2	-	8.2	
Total	10.7	10.7	10.7	10.7	-	10.7	
<b>Pile Installation Demonstration Project</b>							
Capital Outlay Support	1.8	1.8	1.8	1.8	-	1.8	
Capital Outlay	9.2	9.2	9.2	9.2	-	9.2	
Total	11.0	11.0	11.0	11.0	-	11.0	
<b>Existing Bridge Demolition</b>							
Capital Outlay Support	79.7	79.7	79.7	79.7	-	0.2	
Capital Outlay	239.2	239.2	222.0	222.0	-	-	
Total	318.9	318.9	301.7	301.7	-	0.2	
<b>Stormwater Treatment Measures</b>							
Capital Outlay Support	6.0	6.0	6.0	6.0	-	5.3	
Capital Outlay	15.0	15.0	15.0	15.0	-	3.4	
Total	21.0	21.0	21.0	21.0	-	8.7	
<b>Right-of-way and Environmental Mitigation</b>							
Capital Outlay Support	-	-	-	-	-	-	
Capital Outlay	72.4	72.4	72.4	72.4	-	38.8	
Total	72.4	72.4	72.4	72.4	-	38.8	
<b>Sunk Cost - Existing East Span Retrofit</b>							
Capital Outlay Support	39.5	39.5	39.5	39.5	-	39.5	
Capital Outlay	30.8	30.8	30.8	30.8	-	30.8	
Total	70.3	70.3	70.3	70.3	-	70.3	
<b>Environmental Phase (Expended)</b>							
Capital Outlay Support	97.7	97.7	97.7	97.7	-	97.7	
<b>Project Expenditures, Pre-splits</b>							
Capital Outlay Support	44.9	44.9	44.9	44.9	-	44.9	
<b>Non-project Specific Costs</b>							
Capital Outlay Support	20.0	20.0	20.0	20.0	-	3.2	
Subtotal East Span Capital Outlay Support	959.4	959.4	977.1	977.1	-	450.3	
Subtotal East Span Capital Outlay and Sunk Costs	4,492.1	4,492.1	4,498.5	4,546.8	48.3	1,569.5	
Other Budgeted Capital	35.1	35.1	11.0	11.0	-	1.5	
<b>Total SFOBB East Span</b>	<b>5,486.6</b>	<b>5,486.6</b>	<b>5,486.6</b>	<b>5,534.9</b>	<b>48.3</b>	<b>2,021.3</b>	

(1) The TBPOC approved a budget reduction to the Richmond-San Rafael Project in October 2006 in the amount of \$89 million. See Appendix A-1.  
(Due to the rounding of numbers, the totals above are shown within \$0.02).

## Appendix C.

### CTC TBSRP Contributions, Adopted December 2005.

#### Schedule of Contributions to the Toll Bridge Seismic Retrofit Program (\$ million)

Source	Description	2005-06 (Actual)	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AB 1171	SHA	290									290
	PTA	80	40								120
	Highway Bridge Replacement and Rehabilitation (HBRR)	100	100	100	42						342
	Contingency				1	99	100	100	148		448
AB 144	SHA*	2	8				53	50	17		130
	Motor Vehicle Account (MVA)	75									75
	Spillover		125								125
	SHA**									300	300
	<b>Total</b>	547	273	100	43	99	153	150	165	300	1830

\* Caltrans Efficiency Savings

\*\* SFOBB East Span Demolition Cost

**Appendix D.**  
**Project/Contract Photographs.**  
**SFOBB East Span Replacement Project**

**Skyway Contract**



*Preparation for the Orthotropic Box Girder (OBG)*



*Preparation of Erection Device (ED) for Westbound Orthotropic Tub Lift with Temp Tower*



*Moving the Self Launching Erection Device (SLED) onto 8W*



*Installing Hinge Pipe Beam (HPB) CW - South*

### Skyway Contract (cont'd.)



*Lifting of Westbound OBG (one)*



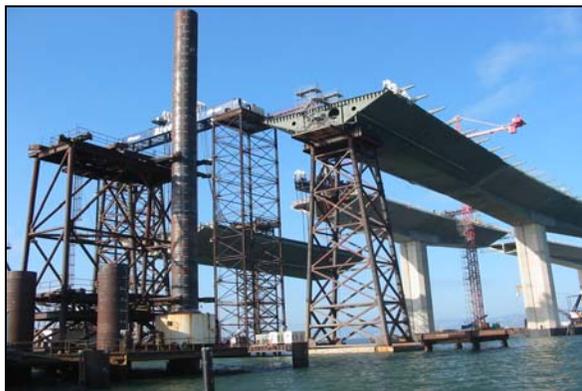
*Construction of Pier Footing Fenders*



*Grinding of Eastbound Skyway Deck*



*Lifting of Westbound OBG (two)*



*View of Skyway Construction (one)*



*View of Skyway Construction (two)*

**Skyway Contract (cont'd.)**



*Cormorant Nesting Platform Installation*



*Westbound OBG*



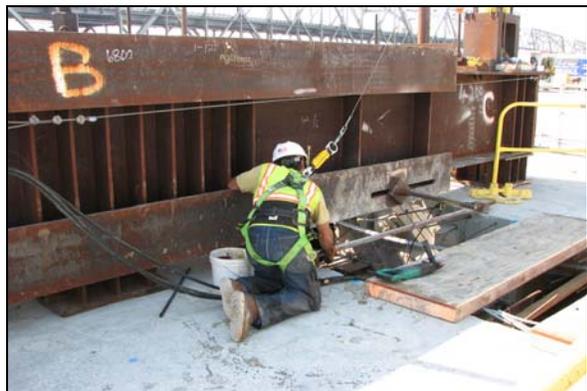
*Bike Path Railing for the Eastbound Skyway*



*Closure Pour Span 5A*



*Closure Pour at OBG*

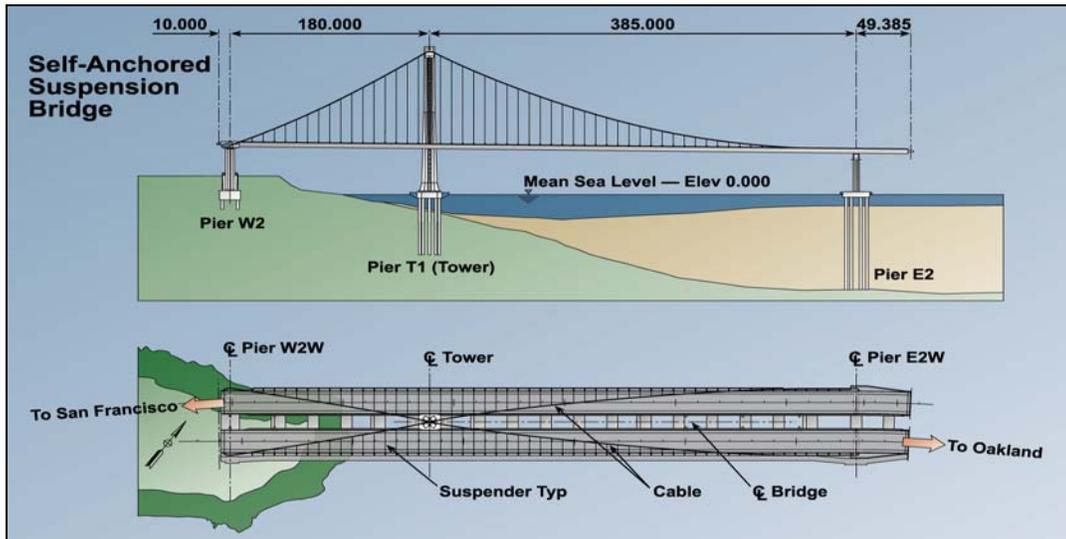


*Jacking at Interior Closure Pour at Span 9*

## SAS Superstructure Contract



SAS Superstructure Artist Rendition



## SAS E2/T1 Foundations Contract



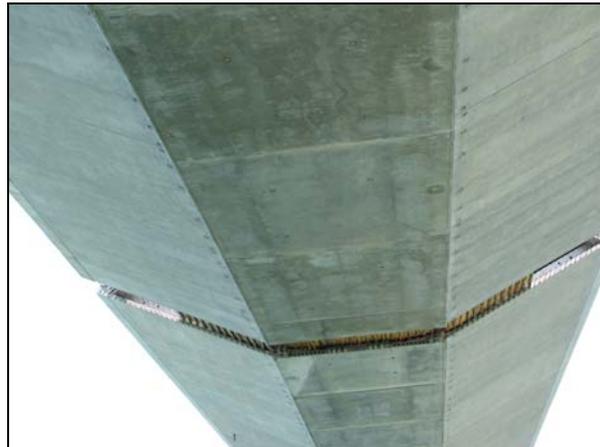
*T1 = Foundation for the 530-foot steel tower  
E2 = Eastern Support of the suspension roadway  
W2 = Western Support of the suspension roadway*



*View of the completed W2 pier columns at the YBI, which will be the western support of the SAS structure*



*Top Half of Piles Welded to Bottom Half at E2*



*Closure Pour*

**SAS E2/T1 Foundations Contract (cont'd.)**



*Pile Driving Operations at E2 (one)*



*Pile Driving Operations at E2 (two)*



*Cofferdam Frame for E2*



*Lifting the Pile Driving Hammer*

## YBI SSD Contract



*Pier Column Construction for Bents 50 and 51*



*Footing and Pier Columns for Bent 48*



*Demobilization of the SSD construction equipment 4*



*East View from Bent 50*



*Demobilization of the SSD construction equipment 2*

## SFOBB West Approach Replacement Project



Frame 8U North

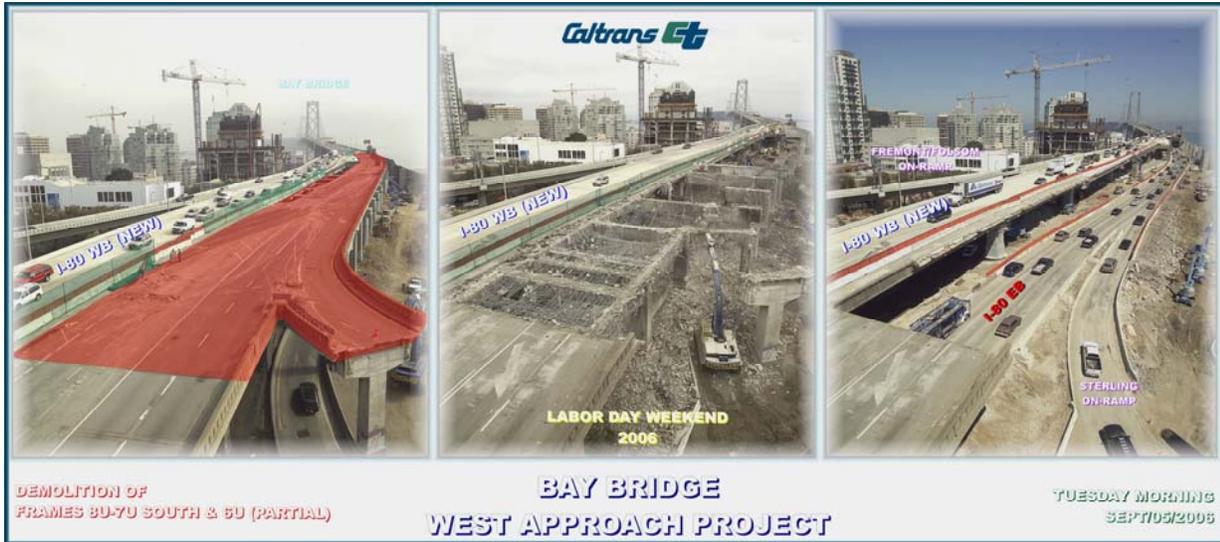


West Approach Project (one)

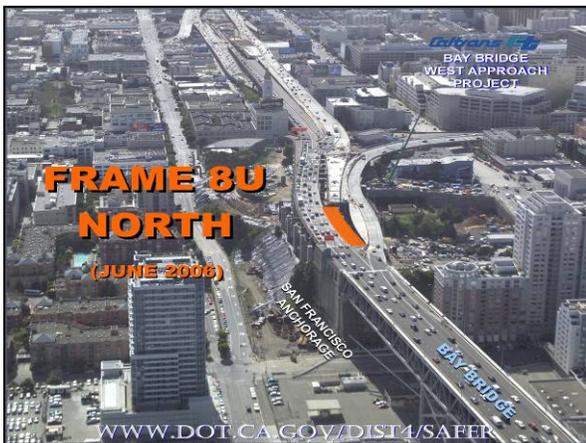


West Approach Project (two)

## SFOBB West Approach Replacement Project (cont'd.)



West Approach Project – Labor Weekend Progress



West Approach 8U North (one)



West Approach 8U North (two)

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